Final Environmental Indicators (EI) Report

Millennium Petrochemicals, Inc. ILD005078126 – Douglas County – 0418080002

Equistar Chemicals, LP – Tuscola Plant 625 East US Hwy 35 / Tuscola, Illinois

Volume 2 of 4
Appendices A through D

Clayton Project No. 15-00116.03 October 31, 2001

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FINAL ENVIRONMENTAL INDICATORS (EI) REPORT

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APPENDIX A

ENVIRONMENTAL INDICATOR FORMS

- A-1 Current Human Exposures Under Control (CA725)
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APPENDIX A-1

CURRENT HUMAN EXPOSURES UNDER CONTROL (CA725)

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Facility Address: Facility EPA ID #:	Millennium Petrochemicals, Inc. (Equistar) 625 East US Highway 36 / Tuscola, IL 6/853 ILD 005 078/26
groundwater, sur	relevant/significant information on known and reasonably suspected releases to soil, face water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste its (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been considered in ation?
	If yes - check here and continue with #2 below.
panera constante que en la constante que partir de la constante que partir della constante que partir	If no - re-evaluate existing data, or
BOX SANO(A-1) ACCESSION	if data are not available skip to #6 and enter "IN" (more information needed) status code.
BACKGROUND	

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" El determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be "contaminated" above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

Groundwater Air (indoors) ²	<u>Yes</u> ⊀	<u>No</u> ×	2	Rationale/Key Contaminants VOCs & Metals - See 10/31/01 EI Report
Surface Soil (e.g., <2 ft) Surface Water Sediment	×	X	-	PAHs & metalo - see 10/31/01 EI Report
Subsurf. Soil (e.g., >2 ft) Air (outdoors) ww7 Pond Sludge	X	×		vocs, PAHs, & Metals - see 10/31/01 EI Report

If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

Refer to EI Report (10/31/01).

¹ "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

² Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

Are there complete pathways between "contamination" and human receptors such that exposures can be 3. reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

determination

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bottom of pend,

(may need to revise

the info on this RO).

However need to the assess potential for keeping (ie, mig. to an) future scenario,

Complete pathways

here as

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Potential Human Receptors (Under Current Conditions)

"Contaminated" Media Groundwater	Residents	Workers <u>No</u>	Day-Care <u>No</u>	Construction No	Trespassers	Recreation	Food³ <u>Yes</u>
-Air (indoors)	¥						
Soil (surface, e.g., <2 ft)						0.0	0
-Surface Water →		Name and American				-	
Sediment	No	res			Yes	Yes	NO
-Soil (subsurface e.g., >2 ft)				-			-
WWT Pond Sludge	No	Yes	€ cha	whe to NO	Yes	No	No
Instructions for Summ	ary Exposur	e Pathway	Evaluation 1	<u> Table:</u>	0		

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.

Even though QA/QC 2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

there are Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

> If no (pathways are not complete for any contaminated media-receptor combination) skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code.

Rationale and Reference(s): Refer to EI Report (10/31/01). - Area residents use groundwater for their potable water supply. - Recreational use of the Kaskaskia River.

Can the exposures from any of the complete pathways identified in #3 be reasonably expected to be 4.

³ Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

"significant" (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

<u>^</u>	If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."
Managhayang anna anna	If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."
	If unknown (for any complete pathway) - skip to #6 and enter "IN" status code
0 1	to EI Report (10/31/01). ninants detected do not exceed human health critaria. Int of contact.
Residential Residential Residential Residential	gen > 25 Ingstion (Pas) of the particle of the
4 If there is any	question on whether the identified exposures are "significant" (i.e., potentially

⁴ If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

Ď.	Can the "signific	ant" exposures (identified in #4) be shown to be within acceptable limits?
		If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing <u>and</u> referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).
	Margolatinasa	If no (there are current exposures that can be reasonably expected to be "unacceptable")-continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.
	######################################	If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code
	Rationale and Re	eference(s):

6.

Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code

· <u> </u>	review of the information contained in the Exposures" are expected to be "Under Company of the Equation of the Equation of the Exposures" are expected to be "Under Company of	Under Control" has been verified. Based on this EI Determination, "Current Human Control" at the <u>Millennium fetroe</u> lity, EPA ID # <u>TID 205 07B 126</u> , loc current and reasonably expected conditions the Agency/State becomes aware of signi	<i>Lem</i> ated a s. This
avasam≂o ŝ	NO - "Current Human Exposures" are	NOT "Under Control."	
##A-2-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-	IN - More information is needed to m	ake a determination.	٠
Completed by	(signature) (print) (title)	Date	
	(citte)		
Supervisor	(signature) (print)	Date	
	(title) (EPA Region or State)		
Locations when	e References may be found:		
		·.	
	•		

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.



APPENDIX A-2

MIGRATION OF CONTAMINATED GROUNDWATER UNDER CONTROL (CA750)

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

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RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

racing	A TASITIE:	Millennium retrochemicals, Lhc. [Eyuls lar]
Facility	y Address:	625 East US Highway 36 / Tuscola IL 61953
Facility	y EPA ID #:	ILD 005 078 126
1.	groundwater me	e relevant/significant information on known and reasonably suspected releases to the dia, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units lated Units (RU), and Areas of Concern (AOC)), been considered in this EI determination?
	<u> </u>	If yes - check here and continue with #2 below.
		If no - re-evaluate existing data, or
	anni anni anni anni anni anni anni anni	if data are not available skip to #6 and enter"IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2.	Is groundwater known or reasonably suspected to be "contaminated" above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility
	If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.
-	If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."
	If unknown - skip to #8 and enter "IN" status code.
	Rationale and Reference(s): Refer to EI Report (10/31/01).
	un I matela exceed groundwater screening levels.

¹ "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

3.	expected to rema	on of contaminated groundwater stabilized (such that contaminated groundwater is ain within "existing area of contaminated groundwater" as defined by the monitoring ated at the time of this determination)?
		If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination" ²).
	************************************	If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination" ²) - skip to #8 and enter "NO" status code, after providing an explanation.
	•	If unknown - skip to #8 and enter "IN" status code.
	Rationale and Re	eference(s):
-	Rafas	- to EI Report (10/31/01).

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² "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4.	Does "contaminated" groundwater discharge into surface water bodies?				
	If yes - continue after identifying potentially affected surface water bodies.				
	If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing are explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.				
	If unknown - skip to #8 and enter "IN" status code.				
	Rationale and Reference(s):				
	Refer to EI Report (10/31/01).				

5.	maximum concer appropriate grow discharging conta	of "contaminated" groundwater into surface water likely to be "insignificant" (i.e., the atration of each contaminant discharging into surface water is less than 10 times their adwater "level," and there are no other conditions (e.g., the nature, and number, of aminants, or environmental setting), which significantly increase the potential for eacts to surface water, sediments, or eco-systems at these concentrations)?
	Wijefallianiani	If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.
		If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration ³ of <u>each</u> contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.
	p	If unknown - enter "IN" status code in #8.
	Rationale and Re	eference(s):

6. Can the discharge of "contaminated" groundwater into surface water be shown to be "currently acceptable" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed

³ As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

to continue until a final remedy decision can be made and implemented4)?

	If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment, appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interimassessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.
	If no - (the discharge of "contaminated" groundwater can not be shown to be "currently acceptable") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.
Mos-monuments	If unknown - skip to 8 and enter "IN" status code.
Rationale and Re	eference(s):

⁴ Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

⁵ The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7.	will groundwater monitoring / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"		
		If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."	
	11111111111111111111111111111111111111	If no - enter "NO" status code in #8.	
		If unknown - enter "IN" status code in #8.	
	Rationale and R	eference(s):	
	Landfi as per	Il groundwater monitoring program will continue to the Illinois EPA post-closure permit.	

EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

<u>*</u>	YE - Yes, "Migration of Contaminated Groundwater verified. Based on a review of the information contandetermination, it has been determined that the "Migration Groundwater" is "Under Control" at the Millennia (Equister) facility, EPA ID # TLD (at Tissola, Tlinois Special Specia	ined in this EI ation of Contaminated M. Petrockenicals OOS 078/26, located ocifically, this determination dwater is under control, and ntaminated groundwater oundwater" This
	ndwater is observed or expected.	
p-(-)-(-)-(-)-(-)-(-)-(-)-(-)-(-)-(-)-(-	IN - More information is needed to make a determine	nation.
Completed by	(signature)	Date
	(print) (title)	·
Supervisor	(signature)	Date
_	(print)	MATERIAN .
	(title)	
	(EPA Region or State)	<u> </u>
Locations when	re References may be found:	
Contact telepho	ne and e-mail numbers	
(name (phon (e-ma	e #)	



APPENDIX B

PHOTOGRAPHS TAKEN DURING RFI FIELD ACTIVITIES

RFI Field Sampling Ecological Inventory B-1

B-2



APPENDIX B-1

RFI FIELD SAMPLING

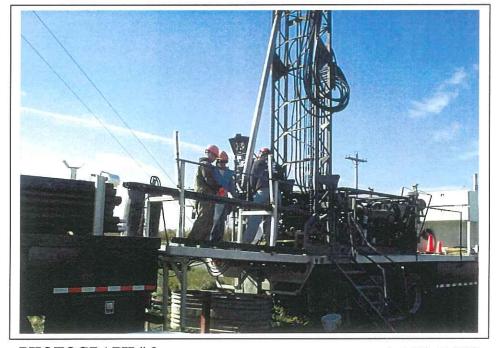
Final Environmental Indicators Report Millennium Petrochemicals / Tuscola, Illinois coverpgs_jmf.doc \ 10/31/01 \ MMN\BRS



PHOTOGRAPH # 1 Location/Direction: Facing north Rotosonic drilling of SB-01.

by MEL: 11/3/00

Project 15-00116.01



PHOTOGRAPH # 2
Location/Direction: Facing southwest
Rotosonic drilling of SB-01S.

by MEL: 11/7/00



PHOTOGRAPH # 3
Location/Direction: Facing north
Rotosonic drilling of SB04.

by MEL: 11/8/00

Project 15-00116.01



PHOTOGRAPH#4

by MEL: 11/3/00

Location/Direction: Facing north

Sample collection from rotosonic sampling pipe.



PHOTOGRAPH # 5
Location/Direction: Facing south
Stainless steel screen at MW02D.

by MEL: 11/1/00

Project 15-00116.01



PHOTOGRAPH # 6
Location/Direction: Facing west
Installation of stainless seel well riser at MW07D.

by MEL: 11/5/00



PHOTOGRAPH # 7 Location/Direction: SB04 Soil found at 24 feet bgs.

by MEL: 11/8/00

Project 15-00116.01



PHOTOGRAPH # 8 Location/Direction: SB04 Soil found at 47 to 48 feet bgs.

by MEL: 11/8/00



PHOTOGRAPH # 9 Location/Direction: SB04 Soil found at 57 to 58 feet bgs.

by MEL: 11/8/00

Project 15-00116.01



PHOTOGRAPH # 10 Location/Direction: SB04 Soil found at 80 feet bgs.

by MEL: 11/8/00



PHOTOGRAPH # 11 Location/Direction: Facing south Installation of the concrete pad at MW09S.

by MEL: 11/14/00

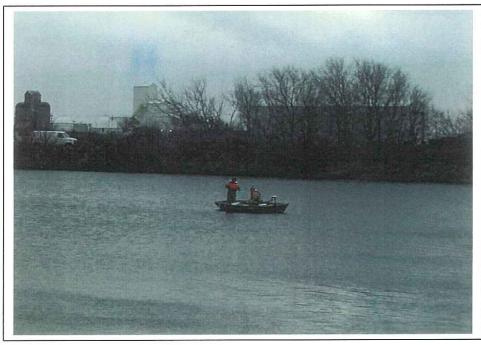
PHOTO LOG Millennium Petrochemicals, Inc. Tuscola, Illinois

Project 15-00116.01



PHOTOGRAPH # 12 <u>Location/Direction</u>: Facing northeast. Development of MW07S and MW07D.

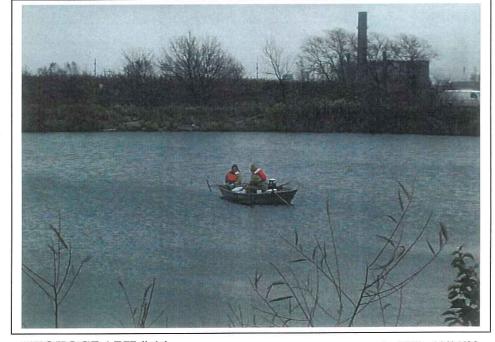
by MEL: 11/30/00



PHOTOGRAPH # 13 Location/Direction: Facing southeast. Sampling sludge at Middle Pond #2.

by MEL: 11/14/00

Project 15-00116.01



PHOTOGRAPH # 14 Location/Direction: Facing east Sampling sludge at Middle Pond #2.

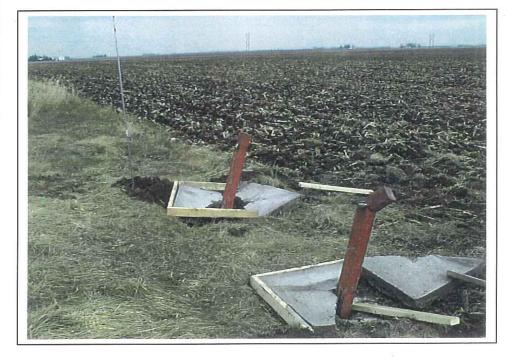
by MEL: 11/14/00



PHOTOGRAPH # 15
Location/Direction: Facing southeast
MW08 after being vandalized.

by MEL: 12/4/00

Project 15-00116.01



PHOTOGRAPH # 16
Location/Direction: Facing northeast
MW08 after being vandalized.

by MEL: 12/4/00



PHOTOGRAPH # 17
Location/Direction: Facing northwest
Low flow sampling of MW02D

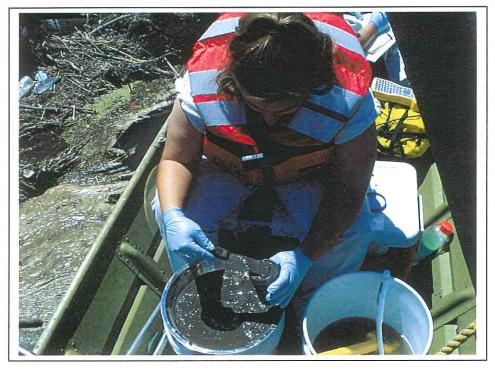
by MEL: 3/8/01

Project 15-00116.01



PHOTOGRAPH # 18
Location/Direction: Facing northwest
Peristaltic sampling of MW10

by MEL: 8/10/01



PHOTOGRAPH # 19
Location/Direction: Facing West
Sampling of Kaskaskia River sediment

by GEG: 7/12/01

PHOTO LOG

Millennium Petrochemicals, Inc. Tuscola, Illinois

Project 15-00116.01

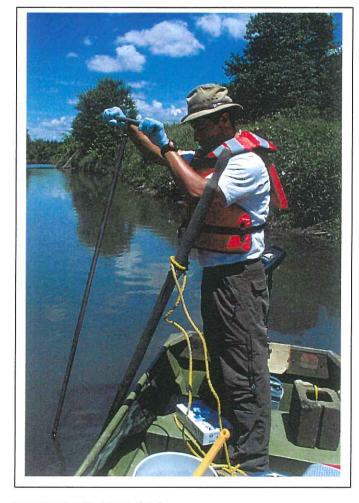


PHOTOGRAPH # 20

by NOB: 7/12/01

Location/Direction: Facing West

Collecting GPS information during sampling of the Kaskaskia River



PHOTOGRAPH # 21 by GEG: 7/12/01
Location/Direction: Facing East
Collecting Kaskaskia River sediment

Project 15-00116.01



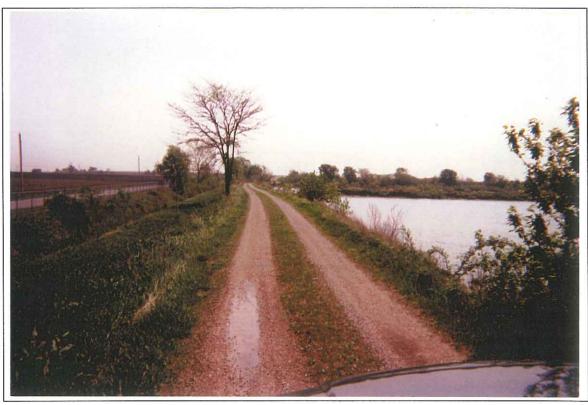
APPENDIX B-2

ECOLOGICAL INVENTORY



PHOTOGRAPH # 1
Location/Direction: Facing east.
View of offsite pond along Route 36.

by HLM: 05/02/01 Time 1037



PHOTOGRAPH # 2
Location/Direction: Facing east.
View of northern drainage swale above Treatment Ponds.

by HLM: 05/02/01 Time 1039



PHOTOGRAPH # 3
Location/Direction: Facing south.
Fresh water pond located on west side of the site.

by HLM: 05/02/01 Time 1038



PHOTOGRAPH # 4
Location/Direction: Facing east.
View of WWT Ponds along the northern edge of the Site.

by HLM: 05/02/01 Time 1042



PHOTOGRAPH # 5
Location/Direction: Facing east.
View of the WWT Ponds in the northwestern area of the Site.

by HLM: 05/02/01 Time 1050



PHOTOGRAPH # 6 by HLM: 05/02/01
Location/Direction: Facing west. Time 1043
Small pond of fresh water located near the inlet on the west side of the Site.



PHOTOGRAPH # 7
Location/Direction: Facing west.
View of the Kaskaskia River.

by HLM: 05/02/01 Time 1055



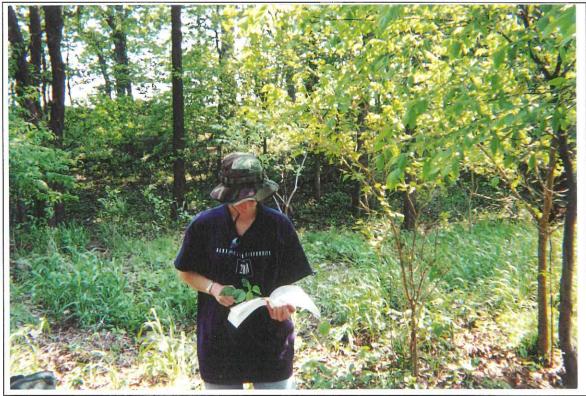
PHOTOGRAPH # 8
Location/Direction: Facing west.
View of Kaskaskia River.

by HLM: 05/02/01 Time 1032



PHOTOGRAPH # 9
Location/Direction: Facing west.
The inlet located in the west end of the Site.

by HLM: 05/02/01 Time 1033



PHOTOGRAPH # 10
Location/Direction: Plot #3
Clayton identifying plants for Floristic Quality Assessment.

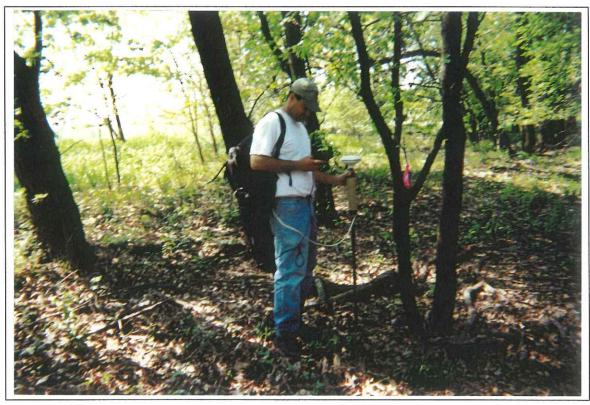
by SH: 05/02/01 Time 1015



PHOTOGRAPH # 11 Location/Direction: Plot #3

by HLM: 05/02/01 Time 1020

Clayton digging soil to describe soil profile for Floristic Quality Assessment.



PHOTOGRAPH # 12 Location/Direction: Plot #3

by HLM: 05/02/01 Time 1025

Clayton operates GPS unit to determine coordinates for Floristic Quality Assessment.

15-00116p1002.doc \ 06/05/01 \ MMN\BRS



PHOTOGRAPH # 13
Location/Direction: Facing south.
Plot #1 in wetland.

by HLM: 05/02/01 Time 830



PHOTOGRAPH # 14
Location/Direction: Facing southeast.
Area of Plot #1 in Floristic Quality Assessment.

by HLM: 05/02/01 Time 0837



PHOTOGRAPH # 15
Location/Direction: Facing east.
Area of Plot #1 in Floristic Quality Assessment.

by HLM: 05/02/01 Time 0835



PHOTOGRAPH # 16
Location/Direction: Facing southwest.
Area of Plot #1 in Floristic Quality Assessment

by HLM: 05/02/01 Time 0838



PHOTOGRAPH # 17
Location/Direction: Facing southwest.
Plot #3 of Floristic Quality Assessment

by HLM: 05/02/01 Time 1017



PHOTOGRAPH # 18
Location/Direction: Facing west.
Area of Plot #3 of Floristic Quality Assessment.

by HLM: 05/02/01 Time 1018



APPENDIX C

SOIL BORING / MONITORING WELL COMPLETION INFORMATION

C-1

Soil Boring Logs Well Completion Diagrams Well Construction Reports C-2

C-3



APPENDIX C-1

SOIL BORING LOGS

Final Environmental Indicators Report Millennium Petrochemicals / Tuscola, Illinois coverpgs_jmf.doc \ 10/31/01 \ MMN\BRS



	CROUP SERVICES	1									
BORING NO		ـــــا	OJECT NO: 15	-0011					E: Millenn	• • • • • • • • • • • • • • • • • • • •	
	OCATION: East of WWT Ponds, across Co.	\neg				RDINA	TES: 9	78260	0.807 E, 11		
	CO: Boart-Longyear	_	RILLER: D. Di	ısche	≥ r				LOGGED		
	EQUIP: Rotosonic Drill		CREEN INTER								f. Nienkerk
	ATER LEVEL: 656.39 ft (12/09/00)	_	CREEN MTL/S	LOT	: Stainles:	s Steel	0.010"		START D	ATE: 1	1/3/00
BOREHOLI	E DIA: 6"	_	TICKUP: 2.03	ft		••••			START T	IME (ho	urs): 10:03
TOP of CAS	SING ELEVATION: 681.21 ft	_	S.S. ELEVATIO	N: 67	79.18 ft				FINISH D	ATE: 1	1/4/00
RISER DIA	/MTL/LGTH: 2"/Stainless Steel/81.5 ft		EV. METHODS	S: Su	bmersible	Pump)		FINISH T	IME (ho	urs): 07:36
	·				SA	MPLE	S		Pl	D	
DЕРТН	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	МЕТНОD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKŞ
ft m				-				-			
2-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	0-1.7' SILT-ML Dark brown, moist, with organic silt, some roots (topsoil) 1.7-45.0' SILTY CLAY-CL Light brown w/ orange mottles & black mottles, moist, trace fine sand, roots (till)			1	3'/5'	RC	M	NA	0	NA	Grass Surface
8 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Grades w/ fine to coarse sand & fine gravel (subangular to rounded) at 7.0 ft Dry from 7.2-7.7 ft			2	3'/5'	RC	M	NA	0 .	NA	Grain-size, bulk density, pH, moisture and total organic carbon sample at 7.0 ft
12-1	Grades gray w/ no mottles at 11.5 ft Interspersed w/ brown silty clay inclusions from 13.6-14.2 ft			3	3'/3'	RC	М	NA	0	NA	
14-	Lens of silt, dark brown, moist, from 14.5-14.7 ft			4	1.87/2	RC	M	NA	0	NA	
16-	10/11 (T.0-1T./ IL										
	• 1 of 5	<u>/</u>	<u>77 8 8 74 </u>		<u> </u>	L		l	No · Ci		L



BORING N		SERVICES VELL NO: MW01D	PROJE	CT N	IO: 15-001	16,01				Millen	nium /Tu		
							SA	MPLE	S		PI	D.	
ОЕРТИ	DE	SCRIPTION	GRAPHIC			NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
18-1-6	(continued)	TY CLAY-CL				5	3.6'/5'	RC	М	NA	0	NA	
22-	20.0 ft	e mottles from 15.0-				6	4.4'/5'	RC	M	NA	0	NA ·	
26 8						7	8.4'/10'	RC	М	NA	0	NA	
32 10													



		P SERVICES	1									
BORING N	O: SB01	WELL NO: MW01D	PROJECT	`NO: 15-001	16.0				Millen	nium /Tu		
	,				<u> </u>	SA	MPLE	:8		PI	ט	
DEPTH	E .	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
38	Grades da silty fine s 1/4"), trac (angular to 44.2-45.0	ark gray w/ trace orang rand inclusions (1/8- e fine to coarse sand o subangular) from ft			8	107/10	RC	М	NA	0	NA ·	
48	Gray w/or trace fine gravel (an 46.1-50.5 Grayish g mottles, n to coarse rounded) Lenses of saturated	"CLAYEY SILT-CL/Mi ange mottles, moist, to coarse sand and fin igular to rounded) (till) "SILT-ML reen, w/ trace orange noist, w/ clay, trace fine sand (subangular to (interglacial) "sand, brown, fine (1/4-1/2") at 47.2 49.9 ft and from 48.6-	e .		O)	8.5710'	RC	M/S/N	NA	0	NA	
52 - 16	Brownish (subangui silt & fine (interglaci Lens of sa from 51.9) 52.9-53.5 Gray, satt Tr silt from 53.5-55.5 Gray w/ tr moist w/ c	and, light brown, fine to 52.2 ft SAND-SP urated, fine, some silt to 53.1- 53.3 ft (inter.) SILT-ML race orange mottles, clay (interglacial)				i de de mande de destace de destace de destace de destace de de destace de destace de destace de destace de de	· · · · · · · · · · · · · · · · · · ·					Grain-size, non volatile organic carbon, pH and moisture sample at 53.0 ft
56-	With orga	nic silt at 54.1 ft	-7////	N KI								

Page: 3 of 5



BORING N		P SERVICES WELL NO: MW01D	PROJECT	NO: 15-	00116	3 01	PRO	JECT	NAME.	Millen	oium /Tı	ıscola, IL	
	<u> </u>	**************************************	1		T			MPLE		14(11)(1)		D I	
DEPTH		DESCRIPTION	GRAPHIC	WELL		NOMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
58	Dark gray sand (ang (interglaciangle) 56.6-58.8° Gray, satu medium to gravel (an some silt of 58.8-71.0° Gray, moi & gravel (angle)	SILTY CLAY-CL, moist w/ fine to coarse ular to rounded) al) SAND-SP urated, fine w/ some to coarse sand & fine gular to rounded), (interglacial) SILTY CLAY-CL st & fine to coarse sand angular to rounded) (till)			XXXXXXXXXXXX	10 \$).1710'	RC	0	NA	NA	M/S/M	
68-1-21						11	6'/6'	RC	М	NA	0	NA	Grain-size, bulk density, pH, moisture and total organic carbon sample at 67.0 ft
72	Light brow fine, w/ so sand & sil rounded) 71.8-74.3 Light brow clay & fine	r SAND-SP whish gray, saturated, ome medium to coarse it (subangular to r SILT-ML whish gray, moist, some to coarse sand o rounded) (till)	/			12	4'/4'	RC	S/M/S	NA	0	NA	
76—— 23	4 of 5												

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						F						
BORING N	O: SB01 \	WELL NO: MW01D	PROJECT	NO: 15-001	16.01				Millen	nium /Tu		
						SA	MPLE	S		PI	D	,
ОЕРТН	DE	SCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
82 25	fine, some r sand (angul- silt Lens of silt, moist from 7 Grades w/ n sand, (angu- trace silt & f (angular to s 77.0-82.5 ft Grades to tr fine gravel (from 82.5-84 Grades to silt, some clay fi	ish gray, saturated, nedium to coarse ar to subangular) & brown to light gray, 76.8-77.0 ft nedium to coarse lar to subangular), ine to medium gravel subangular) from acce coarse sand & angular to rounded) 4.8 ft ome silt at 84.0 ft brownish gray, moist, rom 84.8-85.0 ft			13	8'/10'	RC	Ø	ΝA	0	NA	Grain-size, non volatile organic carbon, pH and moisture sample at 78.0 ft Boring sloughed from 84.47 to 91.0 ft
88 27	Gray (trace 90.7-90.8 ft)	SILTY CLAY-CL orange mottles at), moist w/ fine to i (angular to rounded)			14	5.6'/6'	RC	M	NA	0	NA	
92	End of Bor	ing at 91.0 ft					To be to the design of the des				The state of the s	
94-	· 5 of 5	· .					Ferfere i dick michael (Communication of the Communication of the Commun		No.II B			NAO4 D

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DRILLING CO: Boart- DRILLING EQUIP: RO STATIC WATER LEVE BOREHOLE DIA: 6" TOP of CASING ELEV	osonic Drill L: 657.07 ft (12/09/00)	S S	DRILLER: D. D SCREEN INTEI SCREEN MTL/S STICKUP: 1.98	usche RVAL: SLOT:	COC r 49.14-53	RDINA	NTES: 9		E: Millenn 5.170 E, 11 LOGGED CHECKE	43144.2 BY: K.	279 N Comire
DRILLING CO: Boart- DRILLING EQUIP: RO STATIC WATER LEVE BOREHOLE DIA: 6" TOP of CASING ELEV	ongyear osonic Drill L: 657.07 ft (12/09/00) ATION: 681.24 ft		DRILLER: D. D SCREEN INTEI SCREEN MTL/S STICKUP: 1.98	RVAL:	r 49.14-53	.84 fee		7825	LOGGED	BY: K.	Comire
DRILLING EQUIP: Ro STATIC WATER LEVE BOREHOLE DIA: 6" TOP of CASING ELEV	osonic Drill L: 657.07 ft (12/09/00) ATION: 681.24 ft	\$ \$	SCREEN INTER SCREEN MTL/S STICKUP: 1.98	RVAL:	49.14-53		t bgs				
STATIC WATER LEVE BOREHOLE DIA: 6" TOP of CASING ELEV	L: 657.07 ft (12/09/00) ATION: 681.24 ft	\$ \$	SCREEN MTL/S STICKUP: 1.98	SLOT:			t bgs		CHECKE	11 AY R	ii. Nienkork
BOREHOLE DIA: 6" TOP of CASING ELEV	ATION: 681.24 ft	\$	STICKUP: 1.98		otainies		/0.040P		CTART -		
TOP of CASING ELEV						s Steel	/0.010"		START		
					A 90 St						urs): 8:13
RISER DIAWITEEGIF	. 2 Idlamess Steems1.12 II	١٠	G.S. ELEVATION				······································		FINISH D		
			DEV. METHOD	3: 3u							urs): 15:00
	1				SA	MPLE	.5		Pl)	
DEРТН	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	GOHLƏM	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
2 Drilled to See Log	954.2 ft SB01/MW01D		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX								Grass Surface



BORING N	GROU 0: SB01	P SERVICES WELL NO: MW01S	PROJEC	T NO: 15-001	16.01	PRO	JECT	NAME:	Millen	nium/ Tu	scola, IL	100000000
						SA	MPLE	S		PI	D	
DEPTH	. [DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	МЕТНОБ	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
18	: 2 of 3											W01S



BORING NO	GROU D: SB01	P SERVICES WELL NO: MW01S	PROJ	ECT	NO: 15-001	16.01	PRO	JECT	NAME:	Millen	nium/ Tu	scola, Il	
							SA	MPLE	S		PI		
DEPTH	. !	DESCRIPTION		GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
38 10 12 40 44 44 46 48 50 52 54 11 16 56 56 56 56 56 56 56 56 56 56 56 56 56		oring at 54.2 ft	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0										Boring sloughed from 54.14 to 54.20 ft
	:3 of 3				·····			<u> </u>	<u> </u>	86-11	1		l IW01S

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BORING N	O: SB02 WELL NO: MW02D	DP'	JECT NO: 15-	004	E 04	DD.) IECT	NI ABA	E. 8421	(=	
	O: SB02 WELL NO: MW02D CATION: East of WWT Ponds, across Co.			-001					E: Millenn		
····	CO: Boart-Longyear		RILLER: D. Du	.ack		MUINA	.ı ⊑ 3: 9	1029	9.197 E, 1		
		+						\dashv	LOGGED		
	EQUIP: Rotosonic Drill		CREEN INTER					_			I. Nienkerk
 	ATER LEVEL: 657.22 ft (12/09/00)	+-	CREEN MTL/S		: Stainles:	s Steel	0.010		START		
BOREHOLI			TICKUP: 2.00 (7 2 4 4 5 4				·		urs): 09:01
	SING ELEVATION: 676.44 ft	+-	S. ELEVATION						FINISH C		
RISER DIA	/MTL/LGTH: 2"/Stainless Steel/69.37 ft	L_D	EV. METHODS	s: Ba					FINISH T	IME (ho	urs): 16:50
					SA	MPLE	S		Pl	D	٠
DEРТН	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	метнор	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
# m # 1	0-4.5' SILTY CLAY-CL Dark gray, moist w/ organic silt,										Grass Surface
2 1 1	trace roots (topsoil from 0-2.0 ft) Grades grey w/ orange mottles, some organic silt, trace roots at 2.0 ft (till) 4.5-6.0' CLAY-CL			1	5'/5'	RC	M	NA	0	NA	
73 73 73 74 75 75 75 75 75 75 75 75 75 75 75 75 75	Light brown, w/ orange mottles, moist, some silt, trace fine to coarse sand (angular to subangular) (till) 6.0-46.4' SILTY CLAY-CL Grayish brown w/ some orange mottles, moist, some fine to coarse sand & fine gravel (angular to subangular) (till)			2	3.6'/5'	RC	M	NA	O	NA ·	
12 14 14 14 14 14 14 14 14 14 14 14 14 14	Grades grey w/ no mottles at 12.0 ft Trace medium-coarse gravel from 15.0-20.0 ft (angular to subangular)			3	4.6'/5'	RC	М	NA	0	NA	
16-											
L	· 1 of 1	UVZ	<u> </u>	L		L	L	L	No e	<u></u>	



BORING NO		P SERVICES	DDC IFC	F NO. 45 00 1		4 555	NECT.	A A ***	20:22			
BORING N	J: 3BU2	WELL NO: MW02D	PROJEC	Г NO: 15-001	16.0		MPLE		Millen	nium / To		L
DEPTH	C	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
18-1	(Continued	SILTY CLAY-CL i) to coarse sand			4	4.4'/5'	RC	М	NA	0	NA	
22-1		o rounded) from 20.0-			5	5'/5'	RC	М	NA	0	NA	
26 28 28 30 30	W/ fine to (subangul 28.9-33.5	coarse sand & gravel ar to rounded) from ft			6	5'/5'	RC	М	NA	0	NA	
32 10 334 10 34 11	Some fine gravel (sul from 33.5-	to coarse sand & fine bangular to rounded) 35.0 ft (angular to om 35.0-40.0 ft)			7	4.6'/5'	RC	M	NA	0	NA NA	
36												



		PSERVICES											
BORING N	0: SB02	WELL NO: MW02D	PROJE	CT	NO: 15-00	16.01				Millen	nium / Tu		L
DEPTH	ľ	DESCRIPTION	GRAPHIC		WELL	NUMBER	RECOVERY	MPLE	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE O	REMARKS
38 - 12	(Continued W/ fine to	coarse sand & gravel ar to rounded) from				80	5'/5'	RC	M	NA	0	NA	
42	orange silf (1/8-1/4"), sand (ang ft Lens of sil fine from 4 Lens of sil from 44.5-	orange mottles and ty fine sand inclusions trace fine to coarse ular to rounded) at 42.3 by sand, gray, moist, 43.9-44.1 ft t, gray, moist w/ clay 44.8 ft				9	4.8'5'	RC	М	NA	0	NA	
46 1 14	sand & fin rounded) a 46.4-47.4 Brown, mo gray (1/4") (interglaci: 47.4-48.3 Gray, mois sand & fin rounded) (48.3-49.3	SILT-ML pist, lenses of clay,) at 47.2 & 47.3 ft al) SILTY CLAY-CL st, some fine to coarse e gravel (angular to (interglacial) SILT-ML				ф. О	5'/5'	RC	М	NA	0	NA	
52 1 16	Dark brow & trace ro 49.3-68.9° Gray w/ tr moist (till)	n, moist w/ some clay ots (interglacial) SILTY CLAY-CL ace black mottles,				11	4.2'/5'	RC	M	NA	0	NA	
56-	Lens of sa fine to coa	and, gray, saturated, arse from 56.4-56.5 ft			NE								

Page: 3 of 4



	GROU	Y											
BORING N	D: SB02	WELL NO: MW02D	PROJ	JECT	NO: 15-001	16.01				Millen	nium / Tı		L
							<u> </u>	MPLE	:8 		PI	ט	
DEPTH		DESCRIPTION		GRAPHIC	WELL	NUMBER	RECOVERY	метнор	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
58,	(Continued					12	6'/6'	RC	М	NΑ	0	NA	
62 19	race fine (angular to 68.9 ft	to coarse gravel o rounded) from 61.0-				13	4'/4'	RC	M	NA	0	NA	
66			THE REPORT OF THE PROPERTY OF			14	4'/4'	RC	M	NA	. 0	NA	
70-	Gray, saturounded), 69.6-75.0° Gray, dry,	SAND-SW urated, (angular to some silt SILTY CLAY-CL w/ fine to coarse sand vel (angular to rounder	d d)					- Committee of the Comm					
74-1	fine from Grades m	lty sand, gray, moist, 72.6-72.8 ft oist at 73.0 ft				15	6'/6'	RC	S/D/M	NA.	0	NA	Boring sloughed from 72.37 to 75.0 ft
	End of bo	oring at 75.0 ft								1100	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
l													
76	: 4 of 4											<u> </u>	 W02D

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	GROUP SERVICES										
BORING N			ROJECT NO: 1	5-0011	1						uscola, IL
	OCATION: East of WWT Ponds, across					ORDINA	ATES: 9	7830	6.947 E, 1		
	CO: Boart-Longyear		DRILLER: D. D								. Comire
	EQUIP: Rotosonic Drill		SCREEN INTE						CHECKE	D BY: I	M. Nienkerk
	ATER LEVEL: 673.40 ft (12/09/00)		SCREEN MTL/		Stainles	s Steel	/0.010"		START E	ATE: 1	1/03/00
BOREHOL			STICKUP: 2.00	ft	*************************				START	IME (ho	ours): 6:23
TOP of CA	ASING ELEVATION: 676.50 ft		G.S. ELEVATION	ON: 67	4.50 ft				FINISH D	ATE: 1	1/03/00
RISER DIA	VMTL/LGTH: 2"/Stainless Steel/12.07 ft	1	DEV. METHOD	S: Su	bmersible	e bawk)		FINISH 1	IME (ho	ours): 9:42
•					SA	MPLE	S		PI	D	
DEPTH	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
# # 10	Drilled to 20.5 ft See Log SB02/MW02D										Grass Surface



BODING "		P SERVICES	DDO IFO	NO. 45 00 1	46.00	, near	\ IEAT '	MARCE	R#:11			
BORING NO): SB02	WELL NO: MW02S	PROJECT	NO: 15-001	16,01		MPLE		Millen	nium / Tu Pl		L T
						34	NAIL FE	٠	() ₀	FI		
	r	DESCRIPTION			_	Ϋ́		Ä	BLOW CNT (6")		HEADSPACE	REMARKS
E	_	JESCRIF HON	Ĭ		BER	OVE.	100	TUT	א כו	959	JSP,	REWARNS
ОЕРТН			GRAPHIC	WELL	NUMBER	RECOVERY	МЕТНОD	MOISTURE	o O	SCAN	EAI	
-					-		Fáis.	e=	ш	0)	<u> </u>	
				-								
18												
"‡				: :								
-		•		" = "								
-6												
20-												Boring
	C_a a _ £	ring at 20 F ft										sloughed from 20.07 to 20.50
	End of be	oring at 20.5 ft						·				ft
22=												
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24-												
1		• •										
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26 - 8												
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28-	5	;										Type Laboratory of the Control of th
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36-												
	2 of 2				ı	· · · · · · · · · · · · · · · · · · ·	1		<u></u>		L	I



	F GROUP SE IO: SB02A	PROJECT NO: 154	00116.01	······································	PRO	JECT	NAME:	Millen	nium/ Tu	scola, Il	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
BORING L	OCATION: East of W	/WT Ponds, across (Co. Rd. 615 E		cod	ORDINA	ATES: I	Not me	asured		
DRILLING	CO: Boart-Longyear	•		DRILLE	₹: D. Du	scher					
DRILLING	EQUIP: Rotosonic D	rišl		BOREH	OLE DIA	: 6"				en o comingo de la comingo	
START DA	NTE: 11/02/00		FINISH DATE: 1	1/02/00				LOGG	ED BY:	K. Comi	re
START TIN	ME (hours): 07:35	•	FINISH TIME (h	ours); 15:3	5			CHEC	KED BY	: M. Nie	nkerk
	**************************************				SA	MPLE:	S	I.	PI	D	
T T T	DES	SCRIPTION	GRAPHIC	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
# 3 10 12 14 16 16 16 17 17 16 16 17 17 16 16 16 17 17 16 16 16 16 17 17 18 16 16 16 17 17 18 16 16 17 18 17 18 18 18 18 18 18 18 18 18 18 18 18 18	Drilled to 95.0 ft See Log SB02/N	/W02D for 0 to 75.	Oft			AND					



BORING N	GROUP SE O: SB02A	PROJECT NO: 15-0	0116.01		PRO	JECT !	NAME:	Millen	nium/ Tu	scola, li	
		<u> </u>			SA	VPLE:	3		PI	D	
DEPTH	DES	SCRIPTION	GRAPHIC	NUMBER	RECOVERY	МЕТНОВ	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
18 6 20	. 7 0.5 5										- CP02A



BORING N	GROUP SERVICES D: SB02A PROJECT NO: 15-00116.0	1		PRO	JECT	NAME:	Millen	nium/ Tu	scola. Il	•
					/PLES			PI		
DEРТН	DESCRIPTION	GRAPHIC	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
38 40 42 44 44 46 48 50 52 54 54 54 55 54 54 55 54 54 55 55 54 54	Lens of sand, grayish brown, saturated, fine with some silt from 43.2-44.0 ft at this location									
56-	Cobble at 55.0 ft at this location						Printed and Control of		A CONTRACTOR OF THE PROPERTY O	· .

Page: 3 of 5



BORING N	GROUP SE O: SB02A	PROJECT NO: 15-00116.0	1		PRO	JECTI	VAME:	Millen	nium/ Tu	scola, IL	
	Omerando, P. in the last of th					/PLES			PI		
ОЕРТН	DES	SCRIPTION	GRAPHIC	NUMBER	RECOVERY	метнор	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
58 60 62 19 19 66 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Lens of sand, g silt from 65.8-66	ray, saturated, some 5.7 ft at this location									
76	Light gray, satu	rated, fine, trace silt	. • • • •								o.: SB02A

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BORING NO	GROUP SERVICES D: SB02A PROJECT NO: 15-00116.0	1		PRO	JECT	NAME-	Millon	nium/ Tu	ecola II	
BOKII49 14	J. 3802A PROJECT NO. 13-00110.0	1	_		IPLE:		Willen	P1		
DEPTH	DESCRIPTION	GRAPHIC	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
78 1 1 1 1 1 1 1 1 1	(subangular to rounded) (till) 82.0-83.9' SAND-SW Gray, saturated, some gravel (subangular to rounded) and some silt, (gravel primarily at 83.6-83.9 ft) 83.9-84.9' SILTY CLAY-CL Gray w/ trace orange mottles, moist		1	8.57/10°	RC	S/M	NA	. 0	NA	
86	with fine to coarse sand (angular to rounded) (till) 84.9-86.1' SILT-ML Gray, moist, trace clay Grades light brown w/ trace black mottles at 85.0 ft 86.1-95.0' SILTY CLAY-CL Brown to dark brown w/ trace orange mottles, dry, w/ fine to coarse sand (angular to rounded), trace fine gravel (subangular to rounded) (till)		2	6'/6'	RC	M/D	NA	0	NA	
92-1	With trace red mottling from 91.0-95.0 ft		3	4'/4'	RC	D	NA	0	NA	
96	End of boring at 95.0 ft	And a second sec								o : \$802A

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BORING NO	D: SB03 WELL NO: MW03D	T _D	ROJECT NO: 15-	0011	16.04	DD/	TIECT	NA NA	E: Millenn	Serma / Te	issale II
	DCATION: West of WWT Pond 1	17-1	KOJEGI NO: 13-	-001					1.123 E, 11		
	CO: Boart-Longyear		DRILLER: D. Du	iech.		TUITE	IILJ. 9	1145	LOGGED		
	EQUIP: Rotosonic Drill	-				00.54.					I. Nienkerk
			SCREEN INTER					-	START D		
BOREHOLE	TER LEVEL: 656.20 ft (12/09/00)		······································		. Stannes:	s Steen	0.010	-			
		-+	STICKUP: 2.32 1		70.04.64						urs): 09:11
	SING ELEVATION: 675.63 ft	-	G.S. ELEVATION						FINISH D		
RISER DIA	MTL/LGTH: 2"/Stainless Steel/76.22 ft		DEV. METHODS	3: Su							urs): 17:00
					SA	MPLE	S		PII	D	
DEPTH	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	МЕТНОВ	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
# m 4	0-9.7' SILTY CLAY-CL										Grass Surface
2-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	Dark brown, moist, with organic silt and some roots (topsoil from 0-0.4 ft) Grades brownish gray, moist, w/ orange fine sand inclusions (1/8"), some fine to coarse sand (angular to rounded), trace roots & organic silt (till) Grades w/ orange mottles, trace			1	2.8'/5'	RC	M	NA	0	NA	Log
11111111111111111111111111111111111111	fine to coarse sand (angular to rounded) at 5.0 ft Lens of clayey sand, gray, moist, fine from 9.3-9.5 ft			2	3.5'/5'	RC	M/S	NA	0	NA	SB03/MW03S incorporated into Log SB03/MW03D due to poor recovery from 5.0 to 10.0 ft
10 11 11 11 11 11 11 11 11 11 11 11 11 1	9.7-10.8' SAND-SP Black, saturated, fine, some medium to coarse sand & gravel, (angular to rounded), petroleum-like odor 10.8-40.6' SILTY CLAY-CL Brownish-gray w/ orange mottles (some black staining to 11.3 ft), moist, some fine to coarse sand and gravel, (subangular to rounded) (till)			3	5'/5'	RC	S/M	NA	0	NA	analysis of sand indicated 6.5 ppm
16-	Trace mottles at 13.5 ft								No · S		



18 - 6	10.8-40.6' (Continued Grades gr from 15.0- Mottles gr	ay w/ orange 17.0 ft ade out at 17.	CL mottles	GRAPHIC	MEIL WELL		NUMBER		MPLE RC		BLOW CNT (6")	O O		REMARKS
20 6 20 22 22 24 24 24 24 24 24 24 24 24 24 24	10.8-40.6' (Continued Grades g	SILTY CLAY i) ay w/ orange 17.0 ft ade out at 17.	-CL mottles 0 ft	GRAPHIC	WELL.			RECOVERY	METHOD	MOISTURE		SCAN	HEADSPACE	REMARKS
18 6 20	(Continued Grades gr from 15.0- Mottles gr	i) ay w/ orange 17.0 ft ade out at 17.	mottles				4	9.8'/10'	RC	М	NA	0	NA	
						> > > >								
32 - 10							5	10710'	RC	M	NA	0	NA	
36			•		Ø	3						,		



BORING NO	9: SB03 WELL NO: MW03D P	ROJECT	NO: 15-001	16.01		JECT MPLE		Millen	nium / Tu Pl		
DEPTH	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
38	40.6-43.4' CLAYEY SILT-CL/ML Greenish gray, w/orange mottles, moist, w/fine to coarse sand & gravel (angular to subrounded) and orange fine sand inclusions (1/8-1/2") trace organic silt (interglacial)			6	10710'	RC	М	NA	0	NA	
44	43.4-51.4' SILT-ML Gray, moist, w/ clay, trace fine to coarse sand & fine gravel (subangular to rounded), trace orange & brown, fine sand inclusions (1/8") (interglacial) W/ brown channels from 46.8-49.5 ft										
52-16-54-1-16	Lens of organic silt, dark brown, moist w/ peat from 49.5-50.0 ft Grades saturated at 50.0 ft 51.4-54.1' SAND-SP Gray, saturated, fine, trace med. sand (rounded) (interglacial) Some medium to coarse sand & gravel, trace silt at 52.7 ft Lens of silty clay, gray, moist, from 52.8-52.9 ft 54.1-63.1' CLAYEY SILT-CL/ML Gray, moist, w/ fine to coarse			7	10710	RC	M/S/N	NA	0	NA	
56	sand & gravel (subangular to rounded) (till) Grades grayish brown at 55.0 ft										

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BORING N	U: SB03	WELL NO: MW03D	PROJECT	NO:	15-001	16.03	I PRO	リエレ エ	NAME:	Milleni	nium / Tu	iscola, i	
							SΔ	MPLE	S		PI		
DEPTH		DESCRIPTION	GRAPHIC			NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	scan	HEADSPACE	REMARKS
62 19	Lens of safine from Cobble from Trace roo Gray, sati coarse sarounded)	CLAYEY SILT-CL/ML d) and, gray, saturated, 60.9-61.1 ft om 61.1-61.3 ft ts from 61.3-63.1 ft SILT-ML urated, trace fine to and, (angular to & clay (till)				8	9710'	RC	M/S/M	NA		NA .	
68 - 21	66.0-66.6 Grey, sate 66.6-72.8 Grayish b to coarse to rounde	rom 65.0-66.0 ft ' SAND-SP urated, fine ' CLAYEY SILT-CL/MI rown, moist, some fine sand & gravel, (angula d) (till) om 67.9-68.2 ft		<i>annununun</i>		9	5'/5'	RC	M/S/M	NA	0	NA	
72	Gray, satt rounded) 73.5-79.5 Grayish b trace med	' SAND-SW urated (subangular to ' SAND-SP rown, saturated, fine, fium to coarse sand & el (subangular to				10	9.8710'	RC	M/S/M	NA	0	NA	

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	GROU	PSERVICES	·									···
BORING N	O: SB03	WELL NO: MW03D	PROJECT	NO: 15-001	16.01		=0,00,00,00,00		Millen	nium / Tu		L
						SA	MPLE	S		PI	D	
рертн	I	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	МЕТНОБ	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
78	Lenses of (angular to 74.9 ft and W/ mediu gravel, (ar 75.9-78.2 79.5-80.0	sand, fine to coarse to rounded) from 74.6- td 77.1-77.7 ft to coarse sand & fin ngular to rounded) from ft							·			Boring
82 - 25	80.0-81.1' Gray, moi sand & gr. rounded) 81.1-81.9' Grayish b trace med (subangul 81.9-85.5' Brown, m coarse sa rounded)	rown, moist CLAYEY SILT-CL/ML st, some fine to coarse avel (angular to (till) SAND-SP rown, saturated, fine, fium to coarse sand far to rounded) CLAYEY SILT-CL/ML oist, some fine to nd & gravel (angular to w/ trace orange & e sand inclusions (1/8")			11	5'/5'	RC	W/S/M	NA	0	NA	sloughed from 78.90 to 85.5 ft
86		oring at 85.5 ft										
96-												

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DODING N		1	0.1207.10			1						
BORING N		IPR	OJECT NO: 15	-0011					E: Millenn			
	OCATION: West of WWT Pond 1	Τ.	201152 2 2)KDIN/	NES: 97	748	7.159 E, 1			
DRILLING CO: Boart-Longyear			DRILLER: D. Duscher						LOGGED BY: K. Comire			
DRILLING EQUIP: Rotosonic Drill			SCREEN INTERVAL: 4.59-14.29 ft bgs						CHECKED BY: M. Nienkerk			
STATIC WATER LEVEL: 669.15 ft (12/09/00)			SCREEN MTL/SLOT: Stainless Steel/0.010"						START DATE: 11/16/00			
BOREHOLE DIA: 6"			STICKUP: 2.13 ft						START TIME (hours): 07:15			
TOP of CASING ELEVATION: 675.54 ft			G.S. ELEVATION: 673.41 ft						FINISH DATE: 11/16/00			
RISER DIA/MTL/LGTH: 2"/Stainless Steel/6.72 ft			DEV. METHODS: Submersible pump						FINISH TIME (hours): 09:26			
				SAMPLES					PID			
ОЕРТН	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	МЕТНОВ	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS	
	Drilled to 15.0 ft See Log SB03/MW03D										Grass Surface Boring sloughed from 14.59 to 15.0 ft	
j				ı [ī			1	i	I	
16-	End of Boring at 15.0 ft											



	BORING N	O: SB04 WELL NO: MW04D	Pf	ROJECT NO: 15-	0011	6.01	PRO	JECT	NAM	E: Millenn	ium / Tu	ıscola, İL
DRILLING EQUIP: Rotosonic Drill SCREEN INTERVAL: 98.80 - 103.50 ft bgs STATIC WATER LEVEL: 98.80.3 ft (120900) SCREEN INTERVAL: 98.80 - 103.50 ft bgs STATIC WATER LEVEL: 98.80.3 ft (120900) SCREEN INTERVAL: 98.80 - 103.50 ft bgs START DATE: 11/800 FINSH DATE:	BORING LO	OCATION: South of WWT Ponds 1 & 2				coo	RDINA	TES: 9	7724	4.444 E, 11	41453.4	141 N
STATIC WATER LEVEL; 958.03 ft (12109100) SOREHOLD DIA: 6" STICKUP: 2.04 ft STICKU	DRILLING (CO: Boart-Longyear		DRILLER: D. Du	sche	 €Γ				LOGGED	BY: K.	Comire
STICKUP: 2.04 ft TOP of CASING ELEVATION: 691.29 ft G.S. ELEVATION: 679.25 ft G.S. ELEVATION: 679.25 ft FINISH DATE: 11/900 FINISH TIME (hours): 9:000 FINISH TIME (DRILLING I	EQUIP: Rotosonic Drill								CHECKE	D BY: N	/l. Nienkerk
RESER DIAMTLLGTH: 2"/Stainless Steel/100.84 ft DESCRIPTION DESCRIPTI	STATIC WA	ATER LEVEL: 656.03 ft (12/09/00)		SCREEN MTL/S	LOT	Stainless	Steel	0.010"		START D	ATE: 11	1/8/00
RISER DIA/MTLLGTH: 2"/Stainless Steel/100.84 ft DESCRIPTION DESCRIPT	······					• • • • • • • • • • • • • • • • • • • •				START T	IME (ho	urs): 10:15
DESCRIPTION THAT DESCRIPTION				G.S. ELEVATIO	V: 67	9.25 ft	·		_	FINISH D	ATE: 11	1/9/00
DESCRIPTION DESCR	RISER DIA	/MTL/LGTH: 2"/Stainless Steel/100.84 ft		DEV. METHODS	: Su	bmersible	pump			FINISH T	IME (ho	urs): 9:00
O-0.1' ROOTS O-1.14.2' FILL Silv clay, light brown w/ orange & black mottles, moist, trace fine to coarse sand (angular to submounded), organic sift, fine sand inclusions (1/8"), trace fine to coarse sand (angular to submounded), so fine sand inclusions (1/8"), trace fine to coarse sand (angular to submounded), organic silt at 9.5 ft W/ organic silt from 8.8-8.9 ft Grades to clay, light prown, moist, w/ silf & trace fine to coarse sand (submangular) at 8.7 ft W/ organic silt from 8.8-8.9 ft Grades to clay, brown, moist, w/ silf & trace fine to coarse sand (submangular to rounded) at 10.5 ft Grades to light brown w/ white mottles from 12.0-14.0 ft Lens of organic silty clay, black, moist, trace roots from 14.0-14.2 ft					T	SA	MPLE	S		PI	D	
0-0.1' ROOTS 0.1-14.2' FILL Silty clay, light brown w/ orange & black mottles, moist, trace fine to coarse sand (angular to subangular) at 8.7' ft Grades to clay, light gray, moist, w/ orange fine sand inclusions (1/8'), trace fine to coarse sand (angular to subangular) at 8.7' ft W/ organic silt from 8.8-8.9 ft Grades to clay, brown, moist, w/ silt from 7.0-8.7' ft Grades to clay, light gray, moist, w/ orange fine sand inclusions (1/8'), trace fine to coarse sand (angular to subangular) at 8.7' ft W/ organic silt from 8.8-8.9 ft Grades to clay, brown, moist, w/ silt & trace fine to coarse sand (subangular to rounded) at 10.6 ft Grades to light brown w/ white mottles from 12.0-14.0 ft Lens of organic silty clay, black, moist, trace roots from 14.0-14.2 ft	DEPTH	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	МЕТНОD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
moist, w/ orange fine sand inclusions (1/8"), trace fine to coarse sand (angular to subangular) at 8.7 ft W/ organic silt from 8.8-8.9 ft Grades black w/ organic silt at 9.5 ft Grades to clay, brown, moist, w/ silt & trace fine to coarse sand (subangular to rounded) at 10.6 ft Grades to light brown w/ white mottles from 12.0-14.0 ft Lens of organic silty clay, black, moist, trace roots from 14.0-14.2 ft Mod Rev Park Park Park Park Park Park Park Park	4 ————————————————————————————————————	0.1-14.2' FILL Silty clay, light brown w/ orange & black mottles, moist, trace fine to coarse sand (angular to subrounded), organic silt, fine sand inclusions (1/8") Grades to clay, light brown, w/ white mottles, moist, w/ silt from	000000000000000000000000000000000000000		1	3'/5'	RC	М	NA	0	NA	Grass Surface
mottles from 12.0-14.0 ft Lens of organic silty clay, black, moist, trace roots from 14.0-14.2 ft mottles from 12.0-14.0 ft 3 4.3'/5' RC M NA 0 NA 14-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		moist, w/ orange fine sand inclusions (1/8"), trace fine to coarse sand (angular to subangular) at 8.7 ft W/ organic silt from 8.8-8.9 ft Grades black w/ organic silt at 9.5 ft Grades to clay, brown, moist, w/ silt & trace fine to coarse sand			2	3'/5'	RC	NA	NA	M	0	
	12	Grades to light brown w/ white mottles from 12.0-14.0 ft Lens of organic silty clay, black, moist, trace roots from 14.0-14.2	0 0 0 0 0 0		3	4.3'/5'	RC	М	NA	0	NA	
16→	16	·										



BORING NO		Y SERVICES WELL NO: MW04D P	ROJEC	T NO: 15	5-001	16.01				Millen	nium / Tı		
					ļ	<u>)</u>	SA	MPLE	S		PI	D	
рертн	D	ESCRIPTION	GRAPHIC	WELL		NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
20	Grayish brown trace roots Grades to coarse sar Lens of sa saturated, to subroun Grades trasome fine gravel (and 18.3 ft Some orar 20.0 ft Dark brown 1/4") at 21 Grades gra 23.1 ft	brown, trace fine to nd (subang.) at 14.7 ft nd, light brown, fine to coarse (angular ded) from 17.9-18.3 ft ce dark gray mottles, to coarse sand & fine gular to subrounded) at nge mottles from 15.0-n clay inclusions (1/8-	9		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	4	7.7'/10'	W RC	M	8	0	NA	Grain-size, bulk density, pH, moisture and total organic carbon sample at 23.5 ft
32 10						5	10'/10'	RC	M	NA	0	NA ·	
36—	Accounted to the contract of t				8								



		PSERVICES										
BORING NO	D: SB04	WELL NO: MW04D	PROJECT	NO: 15-00	116.0				Millen	nium / Tı		L
					-	SA	MPLE	:5		PI	D	
DEРТН	С	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
38 12 40 12 42 14 14 14 14 14 14 14 14 14 14 14 14 14	(Continued	SILTY CLAY-CL d)			6	9.7'/10'	RC	М	NA	0	NA	
46 - 14 46 - 14 48 - 1 50 - 1 52 - 16 54 - 1	47.7 ft 47.7-57.0 Greenish to coarse (angular tryellowish inclusions) Grades gr 48.8 ft Lenses of some clay roots, trace	GLAYEY SILT-CL/ML gray, moist, some fine sand & fine gravel o subrounded) w/ light brown fine sand (1/4-1/2") (interglacial) ray, no inclusions at silt, gray, moist, w/ y, and organic silt, trace the fine to coarse sand, 1-54.0, 54.7-55.0, and			7	10710'	RC	M	NA	0	NA	
56-	coarse sa	aturated w/ fine to nd (angular to ed) at 55.0 ft										IWO4D

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	GROU												
BORING NO	D: SB04	WELL NO: MW04D	PROJECT	NO: 1	5-001	16.01		and the latest state of the latest states.		Millen	nium / Tu		L
			ŀ				SA I	MPLE	:S		PI	<u> </u>	
DEРТН		DESCRIPTION	GRAPHIC	WEI		NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
, , , , , , , , , , , , , , , , , , ,	Lens of sa saturated, from 79.0- Lens of cla silt, from 7 79.9-81.4' Grayish br some fine (angular to	and, grayish brown, very fine, some silt				11	8'/8'	RC	M/S	NA	0	NA	
82 25	Grayish br	own, saturated, fine, water to coarse sand ar to subrounded)	/	9				-					
84 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				in the state of th									Grain-size, non-volatile organic carbon, pH and moisture sample from 83.0 to 86.0 ft
90-	Lens of sa from 89.5	and, fine to coarse, 89.8 ft		4		12	8.77/10	RC	S	NA	0	NA	
92 -	Gray, satu medium g subrounde 92.1-97.0	SAND-SW urated, w/ some fine to ravel (angular to ed) SILTY SAND-SM rown, saturated, some		a a a a a a a a a a a a a a a a a a a				-					
94	: 5 of 6	,		RELEASED TO THE PARTY OF THE PA	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	-							IW04D

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	GROU						1						
BORING NO	D: SB04	WELL NO: MW04D	PROJEC	T NO: 1	5-001	16.01		JECT MPLE		Millen	nium / Tu Pi		L
DEPTH	C	DESCRIPTION	GRAPHIC	L			RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
	(continued			N		`							
58	Gray, satu Lens of sa from 57.6-												Grain-size, non-volatile
60	Gray, moi:	CLAYEY SILT-CL/ML st, some fine to coarse avel (angular to (till)				8	9'/10'	RC	w/s/w	NA	0	NA	organic carbon, pH and moisture sample at 58.0 ft
62 19	Lens of sa fine, from	and, gray, saturated, 60.8-61.0 ft											
64	Lens of sa from 64.8-	and, gray, saturated, -65.0 ft				>							
68-						Ø	5'/5'	RC	М	NA	0	NA	Grain-size, bulk density, pH, moisture and total organic carbon sample at 66.0 ft
70-	Lens of sil	It, gray, moist, some 70.2-70.9 ft		B	X								
72-						10	4.8'/5'	RC	M	NA	0	NA.	
74 -				200000000000000000000000000000000000000	200 200 200 200 200 200 200 200 200 200		- AUTOUT OF BEEN						
76—— 23													
	· 4 of 6		[//d]]	, <u>, , , , , , , , , , , , , , , , , , </u>			l	-			Vn · SI		

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10000000		PSERVICES											
BORING N	O: SB04	WELL NO: MW04D	PROJECT	NO:	15-001	16.0	 			Millen	nium / Tu		
							SA	MPLE	S		Pi	D	
DEPTH	[DESCRIPTION	GRAPHIC			NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
	(Continue			a a									
98-	Lens of cl	' SILT-ML ist, some clay ay, gray, moist, trace 17.6-98.0 ft		The state of the s	0 8	13	8.3'/10.8'	RC	S/M	NA	0	NA	
100-	Gray, satu	4' SAND-SW urated, w/ fine to coars gular to rounded)	0000										
	fine, from	and, grayish brown, 100.6-100.8 ft 3.8' CLAYEY SILT-											
102-	CL/ML Brown, m coarse sa	oist, some fine to ind & fine gravel far to subrounded)											
104-	End of B	oring at 103.8 ft			<u>s</u>					420	-		
106-1													
108-1													
110-													·
112				**OFFICE OF THE PROPERTY OF TH			Domento						·
114	The state of the s												
3:			- Company - Comp		·								

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BORING N	O: SB04 WELL NO: MW04S	PR	OJECT NO: 15	5-0011					E: Millenn		
BORING L	OCATION: South of WWT Ponds 1 & 2				COC	DRDINA	TES: 9	7725	1.253 E, 1	141452,	904 N
DRILLING	CO: Boart-Longyear	D	RILLER: D. D	usche	F				LOGGED	BY: K.	Comire
DRILLING	EQUIP: Rotosonic Drill	s	CREEN INTER	RVAL:	4.92-14.	62 ft bg	s		CHECKE	D BY: N	f. Nienkerk
STATIC W	ATER LEVEL: 668.06 ft (12/09/00)	S	CREEN MTL/	SLOT	Stainles	s Steel	/0.010"		START	ATE: 1	1/18/00
BOREHOL	E DIA: 6"	S	STICKUP: 1.93	ft					START T	IME (ho	ours): 07:57
TOP of CA	SING ELEVATION: 681.06 ft	G	S.S. ELEVATIO	N: 67	9.13 ft	-		_	FINISH D		
	/MTL/LGTH: 2"/Stainless Steel/6.85 ft		DEV. METHOD								urs): 10:25
		<u> </u>				MPLE	e		PI		1
				T	<u> </u>	I	. <u></u>			<u> </u>	
DEPTH	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	МЕТНОБ	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
E	Drilled to 15.0 ft See Log SB04/MW04D										Grass Surface
16-	End of Boring at 15.0 ft										

Page: 1 of 1



	GROUP SERVICES	T									
BORING NO	O: SB05 WELL NO: MW05D	PR	ROJECT NO: 15-	0011				_	E: Millenn		
BORING LO	OCATION: West of Fresh Water Pond				coc	RDINA	TES: 9	7578	1.687 E, 1	141559.0	80 N
DRILLING	CO: Boart-Longyear	<u> </u> [DRILLER: D. Du	sche	er				LOGGED	BY: K.	Comire
DRILLING I	EQUIP: Rotosonic Drill	5	SCREEN INTER	VAL	: 80.50 - 8	2.70 ft	bgs		CHECKE	D BY: N	I. Nienkerk
STATIC WA	ATER LEVEL: 655.95 ft (12/09/00)		SCREEN MTL/S					\top	START D	ATE: 11	/16/00
BOREHOLI	 	1	STICKUP: 2.15 f	ft				\neg			urs): 11:26
	SING ELEVATION: 674,48 ft		G.S. ELEVATIO		2.33 ft			\dashv	FINISH D		
	/MTL/LGTH: 2"/Stainless Steel/82.65 ft		DEV. METHODS			num n		\dashv			urs): 10:11
	ar, mastro a reconstruction of the manufacture of the									-	urej. IV.II
					5A	MPLE	<u>ಎ</u>		Pi	IJ	
DEPTH	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
	0-12.8' FILL Clayey silt, dark brown, moist, (topsoil from 0-0.2 ft) Sand & gravel, grayish brown, moist (angular to subangular) from 0.2-1.0 ft Grades to silty clay, grayish brown w/orange mottles, moist, some fine to coarse sand & fine gravel (angular to rounded) at 1.0 ft Trace black mottles from 9.5-10.0 ft Grades to brown w/ orange mottles & orange fine sand inclusions (¹/ ₈ to ¹/ ₄ ") at 10.0 ft 12.8-40.0 SILTY CLAY-CL Brown w/orange & gray mottles, moist, some fine to coarse sand & fine gravel (angular to rounded) (till)			1	2'/5'	RC	M	NA NA	0	NA NA	Grass Surface
16	·										
	, 4 m5 E	шК			L	J	<u></u>	V-11	No.C	<u> </u>	1



BORING N	GROUP SERVICES D: SB05 WELL NO: MW05D P	ROJECT	NO: 15-001	16.01	PRO	JECT	NAMF:	Millen	nium / Tı	iscola I	
						MPLE			PI		LLA CONTRACTOR CONTRAC
DEPTH	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	МЕТНОБ	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12.8-40.0 SILTY CLAY-CL (Continued) Some black mottles from 19.0-19.5 ft			4	4'/5'	RC	M	NA	0	NA	
22-	Grades grayish brown, w/orange & black mottles & orange fine sand inclusions (1/8") from 20.0- 26.6 ft			5	3.175	RC	NA	NA	M	0	
26 - 8	Grades gray w/ trace orange mottles & w/ orange fine sand inclusions (1/8-1") at 26.6 ft			6	9.7'/10'	RC	M	NA	0	NA NA	
32 - 10	Lens of silt, gray, moist, some clay from 32.4-33.1 ft Lens of sand, grayish brown, saturated, fine, from 32.8-32.9 ft Lens of silt, grayish brown, moist, from 33.1-33.2 ft										



BORING NO		P SERVICES WELL NO: MW05D	PROJECT			40.04	Inno		LISBET.	B.0+41			Doymor and the second
BURING N	J: 3D03	WELL NO: WWW.	PROJECT	NO. I	3-001	10.01		MPLE		winen	nium / Tu Pl		<u> </u>
DEPTH	Ē	DESCRIPTION	GRAPHIC	WELL		NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
38	Lens of ormoist, w/ 39.9-40.0 40.0-41.6' Greenish gray mottle coarse sarrounded) (41.6-43.7' Greenish grounded) (Grades grunded) (Grades grun	ganic silt, dark brown, 1/8" lens of peat, from ft (interglacial) CLAYEY SILT-CL/ML gray w/orange & dark es, moist, some fine to nd & gravel (angular to (interglacial)			XXXXXXXXXXXXXXXX	7	107/10	RC	M	NA	0	NA	
46 14 48 50 52 16 54 7 17 16 54 7 17 17 17 17 17 17 17 17 17 17 17 17 1	rounded), (interglacidad), (interglacida	trace roots al) ark brown at 44.4 ft SILT-ML st, w/ peat, some clay al) some peat at 48.3 ft CLAYEY SILT-CL/ML st, w/ fine to coarse avel (angular to (till)			XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	8	10'/10'	RC	M	× × × × × × × × × × × × × × × × × × ×	0	NA	
56		55.5-56.0 ft			N								

Page: 3 of 5



PODING N		P SERVICES	I DEC IFC	P NO. 4	E 004	40.04	Tono	IFAT I		B 0 1 11			
BORING NO	J: 3BU5	WELL NO: MW05D	PROJECT	NQ: 1	o-UU1	10.01		MPLE		willen	nium / Tu Pl		
рертн	C	DESCRIPTION	GRAPHIC			NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
58 60 19 19 64	(Continued	CLAYEY SILT-CL/ML d) n from 61.3-61.4 ft ayish brown at 61.5 ft			XXXXXXXXXXXXXXX	9	9.3710	RC	M	NA	0	NA	
66 21						10	7'/7'	RC	М	NA	0	NA	
74	Brown, sa 73.4-74.5° Grayish bi	SAND-SP turated, fine SAND-SW rown, saturated ar to rounded)									Jo S		

Page: 4 of 5



		PSERVICES					1						·
BORING N	O: SB05	WELL NO: MW05D	PROJECT	NO: 1	5-001	16.01	· · · · · · · · · · · · · · · · · · ·			Millen	nium / Tu		L
							SA	MPLE	:১		PI	ບ ບ	
ОЕРТН	E	DESCRIPTION	GRAPHIC	WEI		NUMBER	RECOVERY	МЕТНОБ	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
78-	Brown, sat to coarse	SAND-SP turated, fine w/ medium sand & fine gravel o rounded)	1		2 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	11	8710'	RC	M/S	NA	0	NA	
80-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	79.9-83.0° Brown, sa to coarse (angular to	SAND-SP turated, fine w/ medium sand & fine gravel o rounded)	T (1)										
82 — 25	coarse sai 79.9-82.0	some medium to nd & fine gravel from ft CLAYEY SILT-CL/ML									·	, ALEXANDER	
84	Gray, mois coarse sai rounded) (Lens of sil 84.7-85.5	st, w/ some fine to nd & gravel (angular to (till) t, brown, moist, from	- 12/AIII			12	4'/4'	RC	S/M	NA	0	NA	Boring sloughed from 83.0 to 86.0 ft
86		oring at 86.0 ft											65.0 to 66.0 ft
88 - 27													
90 -				THE PROPERTY OF THE PROPERTY O		WAS THE STATE OF T							
92								· · · · · · · · · · · · · · · · · · ·				- The second sec	
94-													
96-	: 5 of 5												IW05D

Page: 5 of 5



	GROUP SERVICES										
BORING N		PR	OJECT NO: 1	5-0011					E: Millenn		
<u> </u>	OCATION: West of Fresh Water Pond	1.				ORDINA	TES: 97	7578	0.923 E, 1		
	CO: Boart-Longyear	-	DRILLER: D. D						LOGGED		
	EQUIP: Rotosonic Drill	~~~	SCREEN INTE								1. Nienkerk
	ATER LEVEL: 663.57 ft (12/09/00)		SCREEN MTL/		Stainles	s Steel	/0.010"	\dashv	START		
BOREHOL			STICKUP: 2.21		70.00.51		· · · · · · · · · · · · · · · · · · ·	\dashv			ours): 10:33
-	SING ELEVATION: 674.47 ft	-	G.S. ELEVATION						FINISH E		
RISER DIA	/MTL/LGTH: 2"/Stainless Steel/16.57 ft		DEV. METHOD	5: 5u					···		ours): 14:01
				ļ _T	SA	MPLE	:5		PI	D	
	DESCRIPTION	4.5			RY		Щ	BLOW CNT (6")		ACE	REMARKS
I	52001011010	Į	1 .	# I	Ĭ	8		Ü		SP/	KLMAKKS
DEPTH		GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW	SCAN	HEADSPACE	
ft m											
-2-											
*											
] }											
야	Drilled to 25.0 ft	97									Grass Surface
}	See Log SB05/MW05D	و د									
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	GROU		T		·							
BORING N	O: SB05	WELL NO: MW05S	PROJECT	NO: 15-001	16.01				Millen	nium/ Tu		L
ОЕРТН		DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	WETHOD TH	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
26 - 8 22	fine from 2 location Lenses of saturated, 1/4" at 23 location End of Be	and, brown, saturated, 23.3-23.5 ft at this sand, brown, fine, 1/2" at 23.7 ft, 9 and 24.0 ft at this oring at 25.0 ft										Boring sloughed from 24.36 to 25.0 ft



	GROUP SERVICES		.,			····					
BORING NO		PF	ROJECT NO: 15-	0011					E: Millenn		
	OCATION: West of WWT Pond 8	r			· · · · · · · · · · · · · · · · · · ·	RDINA	TES: 9	7547	7.039 E, 11	42127.0	539 N
	CO: Boart-Longyear	_	DRILLER: D. Du	sch	er				LOGGED	BY: K.	Comire
	EQUIP: Rotosonic Drill		SCREEN INTER						CHECKE	D BY: N	1. Nienkerk
STATIC WA	TER LEVEL: 655.83 ft (12/09/00)		SCREEN MTL/S	LOT	: Stainles:	s Steel	0.010"	_	START D	ATE: 1	1/5/00
BOREHOLI	E DIA: 6"		STICKUP: 1.70 f	ft		· · · · · · · · · · · · · · · · · · ·			START T	IME (ho	urs): 07:08
TOP of CAS	SING ELEVATION: 664.20 ft		G.S. ELEVATION	N: 60	32.50 ft	J	.,		FINISH D	ATE: 1	1/5/00
RISER DIA	MTL/LGTH: 2"/Stainless Steel/68.30 ft		DEV. METHODS	: Su	bmersible	pump			FINISH T	IME (ho	urs): 14:17
					SA	MPLE	S		Pli)	
DЕРТН	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	МЕТНОВ	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
ft m											
2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0-0.1' ROOTS 0.1-13.2' SILTY CLAY-CL Grayish brown w/ trace orange mottles, moist, some fine to coarse sand (angular to rounded), trace roots (till) Lens of clayey sand, brown, moist, from 1.7-1.9 ft Grades brown at 2.2 ft			1	4.6'/5'	RC	M	NA	0	NA	Grass Surface Grain-size,
70 6 8 8 10 10	Grades w/orange mottles & trace fine gravel at 5.5 ft			2	5'/5'	RC	M	NA	0	NA	bulk density, pH, moisture and total organic carbon sample at 5.0 ft
12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	13.2-16.6' SILT-ML Light brown w/ gray channels (leached) & trace orange mottles, moist, trace clay & fine to coarse	THE REAL PROPERTY OF THE PROPE		3	4.6'/5'	RC	М	NA	0	NA	
16-	sand & fine gravel (till)										



BORING NO	GROUP SERVICES D: SB06 WELL NO: MW06D P	ROJECT	NO: 15-001	16.01				Millen	nium / Tı		1
ОЕРТН	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY &	METHOD 37	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
18-1-6	Grades to some clay at 16.1 ft 16.6-33.4' SILTY CLAY-CL Gray, w/orange mottles, moist, with fine to coarse sand and fine gravel (angular to rounded) (till) Lens of silt, light brown, moist,			4	4.675	RC	M	NA	0	NA	
22-1	from 19.7-19.8 ft			5	3.4'/5'	RC	М	NA	0	NA	
26 1 8 26 1 8 28 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	W/orange fine sand inclusions			6	5'/5 '	RC	M	NA	0	NA	
30-1	33.4-35.5' CLAYEY SILT-CL/ML Gray, w/ trace orange mottles, moist, w/ some fine to coarse sand (subangular to rounded)			7	5'/5'	RC	М	NA.	0	NA	Grain-size, bulk density, non volatile organic carbon, pH and moisture sample at 35.5 ft
36-	(till) 2 of 4										IW06D



BORING NO		ERVICES LL NO: MW06D P	ROJE	TN	0: 15-00	116.01				Milleni	nium / Tı		L
							SA	MPLE	S	r l	PI	D	
ОЕРТН	DESC	CRIPTION	GRAPHIC			NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
38 12	& trace roots, t sand & gravel rounded) (inter Trace organic ft	oist, w/ organic silt race fine to coarse (subangular to glacial) silt from 36.2-36.4		X X X X X X X		8	4.5'/5'	RC	M	NA	0	NA	
42 1	Gray, moist, w	AYEY SILT-CL/ML / fine sand, some urse sand (angular fine to coarse nded) (till)				O)	5'/5'	RC-	М	NA	0	NA	Grain-size, bulk density, pH, moisture and total organic carbon sample at 42.0 ft
46 - 14 48 - 1						10	4,2'/5'	RC	М	NA	0	NA	
52 - 16						11	4.7'/5'	RC	М	NA	0	NA	
56	: 3 of 4			2									1W06D

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			SERVICES									· crowns	***************************************
BORING	NC): SB06	WELL NO: MW06D	PROJECT	NO: 15-001	16.01				Millen	nium / Tu		L
DEPTH		D	PESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD THOM	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
58-		40.0-62.9' (Continued	CLAYEY SILT-CL/ML			12	6'/6'	RC	М	NΑ	0	NA	
62-	19	62.9-65.0'											
64-		Grayish br trace silt Grades to trace coars at 64.2 ft 65.0-67.4' Grayish br (subangula	rown, saturated, fine, fine to medium w/ se sand & fine gravel SAND-SW rown, saturated ar to rounded) w/ trace I (subrounded)			13	8.8'/9'	RC	M/S	NA	0	NA	Grain-size, non volatile organic carbon, pH and moisture
68	21	Grayish br medium, v	SAND-SP rown, saturated, fine to w/ trace coarse sand & I (subangular to										sample at 66.0 ft
72-		Gray, mois sand (sub- trace fine	cLAYEY SILT-CL/ML st, some fine to coarse angular to rounded), to coarse gravel o subrounded) (till)			14	5'/5'	RC	0	NA	NA	S/M	Boring sloughed from 71.60 to 75.0 ft
]	23	End of Bo	oring at 75.0 ft										
76-				and the same of th									
Щ		4 of 4			<u> </u>	1	I	1	<u> </u>		<u> </u>		l IWASD

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BORING N	O: SB06	WELL NO: MW06S	PR	OJECT NO: 15	-0011	6.01	PR	OJECT	NAME	E: Millenn	ium/ Tu	iscola, IL
BORING L	OCATION: West	of WWT Pond 8				coc	RDINA	TES: 9	75474	.709 E, 1	142133.	447 N
DRILLING	CO: Boart-Longy	/ear	Ε	ORILLER: D. D	usche	er				LOGGED	BY: K.	Comire
DRILLING	EQUIP: Rotoson	ic Drill	5	SCREEN INTE	RVAL	30.00-39	.70 ft b	gs		CHECKE	D BY: I	4. Nienkerk
STATIC W	ATER LEVEL: 65	5.43 ft (12/09/00)	5	SCREEN MTL/	SLOT	Stainles	s Steel	/0.010"		START D	ATE: 1	1/5/00
BOREHOL	E DIA: 6"		٤	STICKUP: 2.04	ft					START T	IME (ho	ours): 14:31
TOP of CA	SING ELEVATIO	N: 664.46 ft	(G.S. ELEVATIO	N: 66	2.42 ft				FINISH D	ATE: 1	1/6/00
RISER DIA	VMTL/LGTH: 2"/S	Stainless Steel/32.04 ft	[DEV. METHOD	S: Su	bmersible	e pump	•		FINISH T	IME (ho	ours): 13:47
						SA	MPLE	S		PI	D	
DEPTH	DES	SCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
#2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Drilled to 40.0 See Log SB0	D ft 6/MW06D										Grass Surface



BORING N	СКО U 0: SB06	P SERVICES WELL NO: MW06S	PROJECT	NO: 15-001	16,01	PRO	JECT	NAME:	Millen	nium/ Tu	scola, il	a
		The state of the s					MPLE			PI		
DEPTH	I	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
18 20 22 24 26 8 28 30 34 34 34 36 36 36 36 36 36 36 36 36 36 36 36 36	moist, wit from 30.8	ayey gravel, gray, h fine to coarse sand -31.5 ft at this location.										



BORING NO: SB08 WELL NO: MWoss DESCRIPTION DESCRIPTION DESCRIPTION Lans of silt, gray, moist, w/ some clay from 37.0-37.3 ft at this location Lens of peat, dark brown, moist, come fire to coarse sand and fine gravel from 38.0-38.5 ft at this location Lons of silt, gray, moist, some fire to coarse sand and fine gravel from 38.0-38.5 ft at this location Lons of silt, gray, moist, some fire to coarse sand and fine gravel from 38.0-38.5 ft at this location Lons of silt, gray, moist, some fire to coarse gravel (subrounded) End of Boring at 40.0 ft 144 145 146 147 148 148 148 148 149 150 160 170 180 180 180 180 180 180 18			P 5	ERV	10	E S	*******															
DESCRIPTION DESCR	306	8	WE	LL NC	: MW	/06S	Р	ROJE	СТ	NO: 1	5-001	16.01				ΛE:	Millen			L		
Lens of silt, gray, moist, w/ some day from 37.0-37.3 ft at this location Lens of peat, dark brown, moist, from 37.3-38.0 ft w/ lens of silt (3/4") gray, moist, at 37.5 ft at this location Lens of silt, gray, moist, some fine to coarse sand and fine gravel from 38.0-38.5 ft at this location 38.5-40.0" CLAYEY SILT-CLMML Gray, moist, w/ fine sand, some medium to coarse sand (angular to rounded) and fine to coarse gravel (subrounded) End of Boring at 40.0 ft		ľ	DESC	CRIPT	TION			SRAPHIC		WELL		NUMBER			T	300000	SLOW CNT (6")			RE	WARKS	3
50	y from ation ns of part of the stocal from the	from ion 37.3-) gray ocation ocation 40.0°, molium to under el (su	37.0- eat, d -38.0 /, mo on lt, gra arse s m 38. ' CLA st, w o coa d) and broun	ark b ft w/ ist, af ay, mo sand a .0-38. YEY (fine irse sid fine nded)	rown lens t 37.5 sand f 5 ft a	this , moi of sil of tat some fine at this (anguoarse	ist, It t s 						L.	<u> </u>				· ·	4			
									A CARACTER AND THE STATE OF THE							the state of the s						

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	GROUP SERVICES				***************************************	-,					
BORING N		PF	ROJECT NO: 15-	0011					E: Millenni		
	OCATION: NW corner of WWT Pond 7					RDINA	TES: 97	5434	4.138 E, 11	42472.0	021 N
DRILLING (CO: Boart-Longyear		DRILLER: D. Du	sche	er				LOGGED	BY: K.	Comire
DRILLING I	EQUIP: Rotosonic Drill		SCREEN INTER	VAL	68.54-73	.24 ft b	gs		CHECKE	D BY: N	1. Nienkerk
STATIC WA	ATER LEVEL: 655.86 ft (12/09/00)		SCREEN MTL/S	LOT	Stainles:	s Steel	0.010"		START D	ATE: 1	1/6/00
BOREHOLI	E DIA: 6"		STICKUP: 2.11 f	î					START T	IME (ho	urs): 14:39
TOP of CAS	SING ELEVATION: 666.13 ft		G.S. ELEVATIO	N: 66	4.02 ft				FINISH D	ATE: 1	1/7/00
RISER DIA	MTL/LGTH: 2"/Stainless Steel/70.65 ft		DEV. METHODS	: Su	bmersible	Pump			FINISH T	IME (ho	urs): 10:53
		Γ.			SA	MPLE	S		Pil	D	
рертн	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	МЕТНОБ	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
ft m 4	-					,					
	0-0.1' ROOTS 0.1-31.8' SILTY CLAY-CL Light brown, with orange mottles, moist, trace fine to coarse sand (angular to subangular), trace roots (till) Lens of organic silt, black, moist from 1.8 to 2.2 ft			1	5'/5'	RC	M	NA	0	NA .	Grass Surface
ការក្រាក់ការក្រាក់ការការក្រាក់ការក្រាក់ការក ២ 12 12	With fine to coarse sand and fine gravel (subangular to rounded) from 9.6 to 10.0 ft Grades brown with some orange mottles, some fine to coarse sand and fine gravel (angular to rounded) with gray clay inclusions (1/4") at 10.0 ft Trace orange mottles at 12.5 ft			2	5'/10'	RC	M	NA	0	NA	
141111111111111111111111111111111111111	Grades gray at 15.0 ft										



BORING NO	CROU		PROJEC	T NO: 15	-0011	16 01	PRO	JECT	NAME:	Millan	nium / Tı	iscola II	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
DOK NO NO	, 6501	40 mm 14 mm	T	1 10. 10				MPLE		WITHCH	PI		
DEPTH	C	DESCRIPTION	GRAPHIC	WELL		NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
18- 	0.1-31.8' \$ (Continued	BILTY CLAY-CL			XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	3	10710'	RC	M	NA	0	NA	
26 — 8 	moist (with 31.3 to 31 st. 31.8-34.7' CLAY-OL Dark brow Lens of perform 32.6 Lenses of and clay (34.7 ft. 34.7-42.0'	rn/black, moist (inter.) eat, dark brown, moist to 32.9 ft alternating organic silt 1/8 to 1/4") from 34.6 to				4	5.8'/10'	RC	М	NA	0	NA	
36	Gray, moi sand (ang	st, some silt, trace fine ular) (till)											W07D



38 - 12 - 12 - 40 - 1 - 42 - 1	34.7-42.0° (Continued Lens of siliclay lenses 36.3 to 36. Grades to	t) t, gray, moist with gray s (1/8 to 1/4") from .6 ft silty clay with some rse sand (angular to	PROJEC	T NO: 1		NUMBER		METHOD WETHOD		BLOW CNT (6")	SCAN		REMARKS
38 - 12 40 - 1 - 12 40 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	34.7-42.0° (Continued Lens of siliclay lenses 36.3 to 36.) Grades to fine to coa	CLAY-CL. t, gray, moist with gray s (1/8 to 1/4") from 6 ft silty clay with some rse sand (angular to				NUMBER				BLOW CNT (6")			REMARKS
38 12 12 40	(Continued Lens of sil- clay lenses 36.3 to 36. Grades to fine to coa	t) t, gray, moist with gray s (1/8 to 1/4") from .6 ft silty clay with some rse sand (angular to		X	X								
44	Gray, mois	CLAYEY SILT-CL/ML st, with fine to coarse ular to rounded) (till)			XXXXXXXXX	5	9.2'/10'	RC	NA	NA	М	0	
48-1	Sund (ung												
PUT	fine from 4	sand, gray, saturated, 19.8 to 50.0, 53.9 to 54.8 to 55.0 ft			XXXXXXXXXX	6	8'/10'	RC	M	NA	0	NA	
56-				M	X								·

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BORING NO	GROUP SERVICES D: SB07 WELL NO: MW07D	PROJECT	NO: 15-001	16.01	.,,			Millen	nium / Tu		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
					SA	MPLE	S	اج_	PII	<u> </u>	
DEРТН	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
58 60 19 19	56.5-57.7' SAND-SP Gray, saturated, fine, with silt Grades to some medium to coarse sand, trace silt at 57.0 ft 57.7-59.0' CLAYEY SILT-CL/ML Gray, moist, with fine to coarse sand (angular to rounded) (till) 59.0-60.0' SILT-ML Gray, moist 60.0-64.2' CLAYEY SILT-CL/ML Gray, moist, with fine to coarse sand (angular to rounded) (till)			7	8'/8'	RC	W/S/N	NA	0	NA	
64 66 68 68	64.2-65.3' SILT-ML Gray, moist, some clay 65.3-68.4' SAND-SP Gray, saturated, fine, with trace medium to coarse sand, (subangular to rounded) and silt 68.4-71.6' SAND-SW			8	6'/6'	RC	M/S	NA	0	NA	
72	Gray, saturated, trace fine gravel, (subangular to rounded) 71.6-73.2' SAND-SP Gray, saturated, fine, with trace medium to coarse sand (subangular) and silt Lens of sand, fine to coarse from 72.9-73.2 ft 73.2-79.0' CLAYEY SILT-CL/ML Gray, moist, with fine to coarse sand and gravel (subangular to rounded) (till)	***************************************		9 .	9.6710	RC	S/M	NA	0	NA	
76-	: 4 of 5					<u> </u>		<u> </u>	l Vo.: SI		

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BORING NO		P SERVICES	BBO IECT	NO: 15-001	16.01	DD0	HECTI	JARAE.	Millon	nium / Tu	scola 1	l
BURING NO	J; 300 <i>1</i>	WELL NO: MW07D	ICKOSECI	190: 15-001	ויט.טינ		MPLE		MILLEUI	nium / ru Pl		k .
рертн	E	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	МЕТНОВ	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
78-	(Continue											Boring sloughed from 73.54 to 79.0 ft
80	End of Bo	oring at 79.0 ft										
82 - 25				THE PARTY OF THE P								
86				· ·								
90 =									**************************************	***************************************		
92-										are well and the state of the s		
94-					FOUT IT							
96-	· E of E											#\#/07F\

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BORING N	O: SB07	WELL NO: MW07S	PRO	JECT NO: 1	5-0011	6.01	PR	OJECT	NAM	E: Millenn	ium/ Tu	scola, IL
BORING L	OCATION: NW o	orner of WWT Pond 7				coc	RDINA	ATES: 9	7543	1.102 E, 1	42461.	349 N
DRILLING	CO: Boart-Long	year	D	RILLER; D. D	usche	۴				LOGGED	BY: K.	Comire
DRILLING	EQUIP: Rotosor	ile Drill	S	CREEN INTE	RVAL:	25.00-34	.70 ft b	gs		CHECKE	D BY: N	1. Nienkerk
STATIC W	ATER LEVEL: 65	55.14 ft (12/09/00)	S	CREEN MTL/	SLOT:	Stainles	s Steel	/0.010"	,	START D	ATE: 1	1/7/00
BOREHOL	E DIA: 6"		s	TICKUP: 2.08	ft					START T	IME (ho	urs): 13:00
TOP of CA	SING ELEVATIO	N: 666.16 ft	G	S. ELEVATION	ON: 66	4.08 ft				FINISH D	ATE: 1	1/7/00
RISER DIA	VMTL/LGTH: 2"/:	Stainless Steel/27.08 ft	D	EV. METHOD	S: Sul	omersible	e pump)	•	FINISH T	IME (ho	urs): 16:52
			Т		Ĭ	SA	MPLE	S		PI	D	
рертн	DE	SCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
ft m 2 10 11 11 11 11 11 11 11 11 11 11 11 11	Drilled to 35. See Log SB(Grass Surface
16-	2: 1 of 2											



DESCRIPTION DESCR	BODING		P SERVICES	Lena	\IFC=	NO: 45 001	40.04	55.5	LECT:	160	0.0114	.,	
DESCRIPTION DESCR	BORING NO): SB07	WELL NO: MW07S	PRO	DJECT	NO: 15-001	16.01				Willen		
Lenses of clayey sand, gray, saturated, wi fine to coarse gravel (angular to rounded) from 25.6-27, 6.28-2-21 and 29.4-29.6 ft at this location Lens of organic silty clay, dark brown/black, moist from 30.4-30.6, 31.4-31.2, and 32.2-33.4 ft at this location (interglacial) Lens of peat, dark brown/black, moist from 31.2-32.2 ft at this location (interglacial) Lens of peat, dark brown/black, moist from 31.2-32.2 ft at this location (interglacial) Lens of peat, dark brown/black, moist from 31.2-32.2 ft at this location (interglacial) End of Boring at 35.0 ft	рертн		DESCRIPTION		GRAPHIC	WELL	NUMBER				BLOW CNT (6")		REMARKS
36	28 8 30 1 10 34 1 10 34 1 10	Lens of or brown/bla 30.6; 31.1 at this local Lens of permoist fron location (i	w/ fine to coarse gular to rounded) from 28.8-29.1 and 29.4-this location rganic silty clay, dark ck, moist from 30.4-31.2; and 32.2-33.4 fation (interglacial) eat, dark brown/black, n 31.2-32.2 ft at this nterglacial)										
	36—												·



BORING NO	D: SB08 WELL NO: MW08D	PI	ROJECT NO: 15	-001	6.01	PR	OJECT	NAME	E: Millenn	ium / Tu	scola, IL
BORING LO	OCATION: SE corner of Co. Rd. 1075 N at					l			.937 E, 11		
DRILLING	CO: Boart-Longyear		DRILLER: D. Du	ısch					LOGGED	BY: K.	Comire
DRILLING I	EQUIP: Rotosonic Drill		SCREEN INTER	VAL	: 83.10-85	.30 ft b	as		CHECKE	D BY: N	l. Nienkerk
STATIC WA	ATER LEVEL: 656.42 (12/09/00)		SCREEN MTL/S						START D	ATE: 11	/18/00
BOREHOLI	E DIA: 6"		STICKUP: (-) 0.2	26 ft					START T	IME (ho	urs): 12:38
TOP of CAS	SING ELEVATION: 683.65 ft		G.S. ELEVATIO		33.91 ft			-	FINISH D	·····	
RISER DIA	/MTL/LGTH: 2"/Stainless Steel/82.84 ft		DEV. METHODS	3: Su	bmersible	e pump)		FINISH T	IME (ho	urs): 11:27
		Т			SA	MPLE	s		PI	<u>.</u>	
DEPTH	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
ft m											Grass Surface
2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0-5.0' SILTY CLAY-CL Dark brown, moist, w/ trace fine to coarse sand & roots (topsoil from 0-1.0 ft (till) Grades brown at 1.0 ft			1	0.7'/4'	RC	М	NA	0	NA	Slip coupling at 3.5 ft to repair damage
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5.0-6.3' SAND-SP Brown, saturated, fine, w/ medium to coarse sand (angular to rounded) 6.3-48.3' SILTY CLAY-CL Grayish brown, moist, some fine to coarse sand & gravel (angular to rounded) w/orange fine sand inclusions (¹/8 to ¹/4") (till)			2	4'/5'	RC	W/S/W	NA	0	NA	ч
10 11 11 12 11 11 11 11 11 11 11 11 11 11	Grades gray at 9.0 ft Trace organic silt at 12.5 ft		XXXXXXX	3	4.7'/5'	RC	M	NA	0	NA	
14 11 11 11 11 11 11 11 11 11 11 11 11 1				4	4.8'/5'	RC	М	NA	0	NA	
18-	: 1 of 6								No.: S		



BORING NO	GROUP SERVICES D: SB08 WELL NO: MW08D	PR	OJECT	NO: 15-001	16.01	PRO	JECT	NAME:	Millen	nium / Tı	iscola. I	L
							MPLE			PI		
DEPTH	DESCRIPTION		GRAPHIC	WELL	NUMBER	RECOVERY	метнор	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
1	6.3-48.3' SILTY CLAY-CL (Continued)											
22 - 7					5	4.5'/5'	RC	М	NA	0	NA	
26-1-												
28-					6	9.4'/10'	RC	M	NA	0	NA	
32-					A TABLE PARTY AND A TABLE PART		web-depthing					
36 - 11							was a reason to see a following the following the state of the second se			The state of the s		
38-	· 2 of 6											IWORD



BORING NO	GROUP SERVICES D: SB08 WELL NO: MW08D P	ROJECT	NO: 15-00	116.01				Millen	nium / Tu		
				\vdash	SA	MPLE	S		PI	D	
рертн	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	МЕТНОВ	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
40 1 13	6.3-48.3' SILTY CLAY-CL (Continued)			7	10710'	RC	М	NA	0	NA	
46	Grades brownish gray with brown fine sand inclusions (1/8 to 1/4"), trace medium to coarse sand and fine gravel (angular to rounded) at 46.7 ft										
52-	Gray, moist, w/ clay & orange			8	8.3'/10'	RC	M	NA	0	NA .	
54	54.0-57.0' SILT-ML Gray, w/ dark brown mottles, moist w/organic silt, some clay, trace fine to coarse sand & gravel (angular to subrounded) roots, peat (interglacial) 57.0-58.0' CLAYEY SILT-CL/ML Gray, moist (interglacial)					Total tied (principle)					

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DODING N		P SERVICES	DDO IEC:	T NIO. 4	E 004	40.04	Lppc	UECT	18825	h#:!h	-i (T-	tt	
BORING N	0: 5608	WELL NO: MW08D	PROJEC	I NO: 1	5-001	16.01		MPLE		Millen	nium / Tu Pl		
ОЕРТН		DESCRIPTION	GRAPHIC		TT to be be	NUMBER	RECOVERY	МЕТНОБ	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
60 - 1- 19	Blackish (& clay (int 59.1-84.5 Gray, moi sand and rounded)	CLAYEY SILT-CL/ML st, some fine to coarse fine gravel (angular to			XXXXXXXXX	9	9.9710	RC	М	NA	0	NA	
66-1						10	6'/6'	RC	М	NA	0	NA	
72						11	3.8'/4'	RC	M	NA	0	NA	
78-	Lens of si	llt, gray, moist, trace 77.6-78.5 ft											

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BORING NO:		WELL NO: MW08D	PRO IEC.	ΓNO: 15-00	116 64	ppn	JECT	NAM≡-	Miller	nium / Tu	ecola I	l
1		ASCRET IACA MIAAGOD	NOVEC	. 140. 15-00	1 10.01		MPLE		MINISTER	PII		
рертн	D	ESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
	59.1-84.5' (Continued	CLAYEY SILT-CL/ML			12	8710	RC	M	NA	0	NA	
84	Gray, satu coarse gra	SAND-SW rated, with fine to vel (angular to	****									Boring
88	Gray, mois	CLAYEY SILT-CL/MI st, some fine to coarse e gravel (angular to till)			13	7717'	RC	M/S/M	NA	0	NA	sloughed from 85.60 to 101.0 ft
90 -	W/orange	mottles from 92.9-93.6					transmittativity and training to					
94	Lens of sa from 95.5- Lens of sil clay from 9	nd, brown, moist, fine		and a second								
96-	moist, with coarse sar rounded), gravel from Lens of sil brown, mo	ind, brownish gray, in some medium to not an angular to trace silt, clay and fine n 95.8-96.5 ft wery fine sand, oist from 96.5-96.6 ft wn at 96.6 ft			14	10'/10'	RC	М	NA	0	NA	
98-	5 of 6	41 0010 11										IWOSD

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DODING N		P SERVICES	222			1555						
BORING NO	J: SB08	WELL NO: MW08D	PROJECT	NO: 15-001	16.01		MPLE		Millen	nium / Tu Pli		0.00
ОЕРТН	E	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
100-	85.5-101.0 CL/ML (Co	O' CLAYEY SILT- ontinued)										
1- 31 102- 1- 31	End of Bo	oring at 101.0 ft										
104												
108-					and decided in the second	·	-					
110	-											
114 35	•						The state of the s					
118-	· 6 of 6											MUSI

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BORING N	IO: SB08 WELL NO: MW08S	PR	OJECT NO: 1	5-0011	6.01	PR	OJECT	NAM	E: Millenn	ium / T	uscola. II.
	OCATION: SE corner of Co. Rd. 1075 N a								1.733 E, 1		
DRILLING	CO: Boart-Longyear	Ī	ORILLER: D. D	usche					LOGGED		
DRILLING	EQUIP: Rotosonic Drill		SCREEN INTE	RVAL:	3.55-13.	25 ft					M. Nienkerk
STATIC W	ATER LEVEL: 677.50 ft (12/09/00)	- 1	SCREEN MTL/	SLOT:	Stainles	s Steel	/0.010"		START D	ATE: 1	1/19/00
BOREHOL	E DIA: 6"		STICKUP: (-) 0	.40 ft				\neg	START T	IME (ho	ours): 15:35
TOP of CA	SING ELEVATION: 683.83 ft	(G.S. ELEVATIO	ON: 68	4.23 ft				FINISH C	ATE: 1	1/19/00
RISER DIA	VMTL/LGTH: 2"/Stainless Steel/3.15 ft	ı	DEV. METHOD	S: Ba	ler				FINISH T	IME (ho	ours): 16:24
		1			SA	MPLE	S		PI	D	
DEРТН	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
## 1 3 14 14 6 8 10 12 14 14 14 14 15 16 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19	Drilled to 14.0 ft See Log SB08/MW08D										Slip coupling at 3.2 ft to repair damage Boring sloughed from 13.55-14.0 ft



	GROUP SERVICES										
BORING N			OJECT NO: 15	-0011					E: Millenn		
	OCATION: South of plant along U.S. Route	· · ·				RDINA	TES: 9	8161	4.465 E, 11		
	CO: Boart-Longyear	_ C	DRILLER: D. Du	ısche	3r				LOGGED	BY: K.	Comire
DRILLING	EQUIP: Rotosonic Drill	<u> s</u>	CREEN INTER	VAL	: 96,72-98	.92 ft b	gs		CHECKE	DBY: N	I. Nienkerk
STATIC W	ATER LEVEL: 658.16 ft (12/09/00)	<u> </u>	SCREEN MTL/S	LOT	: Stainles:	s Steel	0.010"		START D	ATE: 1	1/20/00
BOREHOL	E DIA: 6"	S	STICKUP: 1.75	ft					START T	IME (ho	urs): 13:54
TOP of CA	SING ELEVATION: 696.14 ft	G	G.S. ELEVATIO	N: 69	4.39 ft				FINISH D	ATE: 1	1/21/00
RISER DIA	/MTL/LGTH: 2"/Stainless Steel/98.47 ft	[DEV. METHODS	S: Su	bmersible	Pump	,		FINISH T	IME (ho	urs): 15:39
					SA	MPLE	S		PI	D	
ОЕРТН	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
# m 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		muz			·						Grass Surface
	0.0.3' ROOTS 0.3-55.0' SILTY CLAY-CL Dark brown, moist, with organic silt, trace fine to coarse sand and gravel (angular to rounded), roots (topsoil from 0.3-1.0 ft) (till) Grades brown, with some orange mottles, moist, some fine to coarse and and gravel (angular angular angu			1	1.3'/5'	RC	M	ΝA	0	NA	Olass ourlace
######################################	coarse sand and gravel (angular to rounded) at 1.0 ft Grades gray at 11.0 ft Lens of silt, gray, moist from			2	6710'	RC	M	NA	0	NA	
16-	14.4-14.6 ft										
	· 1 of 6								Na C		



BORING NO	CROUP SERVICES D: SB09 WELL NO: MW09D	PROJECT	NO: 15-001	16.01				Millen	nium / Tu		L
ОЕРТН	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD T	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
18 6 20 6 22	0.3-55.0' SILTY CLAY-CL (Continued) with trace organic silt at 24.8 ft			3	10'/10'	RC	M	NA	0	NA	
26				4	9.77/10	RC	М	Z A	0	NA ·	
36-											

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BORING N	GROUP SERVICES O: SB09 WELL NO: MW09D	PROJEC	CT NO: 15-00	116.01	PRO	JECT	NAMF:	Millen	nium / Tu	iscola l	· · · · · · · · · · · · · · · · · · ·
DOMINON	VILLE 140. 111100D	111002	1 10. 10-00	10.0		MPLE		, vincin	PI		tes
DEPTH	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
38 12 40 12 42 1	0.3-55.0' SILTY CLAY-CL (Continued)			5	9.5'/10'	RC	М	NA	O	NA	
46 — 14 48 — 1 50 — 1 52 — 16				6	9.87/10	RC	М	NA	0	NA	
56-	: 3 of 6										 W09D

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BODING NO	GROUP SERVICES NG NO: SB09 WELL NO: MW09D PROJECT NO: 15-00116.01 PROJECT NAME: Millennium / Tuscola, IL											·
BOKING IV	J. 0000	71.E.E. 110. 111703D	T KOOLG I	140. 13-0	7		AMPLE		MINICI	PI		L
DEРТН	E	DESCRIPTION	GRAPHIC	WELL	NUMBER		МЕТНОВ	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
58 60 62 64	\(\)(interglaci:\) 56.2-65' C Gray, moi:\) coarse san to rounded (interglaci:\) with organ 64.4-65.0	gray, moist al) CLAYEY SILT-CL/ML st, with some fine to nd and gravel (angular d) trace organic silt al) nic silt, trace roots, from ft			7	10710	RC	М	NA	0	NA	
66 - 1 - 21 - 21 - 72 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	organic sit and fine to to rounded 66.4-68.3 Gray, moi coarse sa to rounded 68.3-71.8 Gray, moi trace med and grave subrounded 71.8-72.7 Gray, moi 72.7-95.5 Gray, moi sand (ang	st, with dark brown It inclusions, trace clay to coarse sand (angular d) (interglacial) CLAYEY SILT-CL/ML st, with some fine to nd and gravel (angular d) (till) SAND-ML st, very fine, with silt, ilium to coarse sand I (angular to ed) (till) SILT-ML st CLAYEY SILT-CL/ML st, some fine to coarse pular to rounded) (till) It, gray, moist from			8	10710	' RC	M	NA	0	NA	
76—_	: 4 of 6											IW09D

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GROUP SERVICES BORING NO: SB09 WELL NO: MW09D PROJECT NO: 15-00116.01 PROJECT NAME: Millennium / Tuscola, IL													
BORING N	0: 3809	AAELT MO: MAAAAA	PROJECI	NO:	10-001	10,01		MPLE		willen	PI		
DEPTH	E	DESCRIPTION	GRAPHIC	9		NUMBER	RECOVERY	МЕТНОD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
78	72.7-95.5° (Continue	CLAYEY SILT-CL/ML d)				9	4.5'/5'	RC	М	NA	0	NA	
82 25						10	3'/3'	RC	М	NA	0	NA	
84						11	7'/7'	RC	M	NA	0	NA	
92						12	5'/5'	RC	M	NA	0	NA	
1 1			- 12/2/III					1	1				1
29			22.01		ł								

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BORING NO: SB09 WELL NO: MW09D PROJECT NO: 15-00116.01 PROJECT NAME: Millennium / Tuscola, IL											d d	
BOKING N	J: 5B09	WELL NO: MW09D	PROJECT	NO: 15-001	16.01		MPLE		willen	nium / Tu Pl		<u> </u>
DEPTH	. (DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
98-	Grayish be trace med and fine grounded) 98.3-99.5' Grayish be 99.5-101' Gray, moi	SAND-SP rown, saturated, fine, ium to coarse sand ravel (subangular to SILT-ML rown, moist, some clay CLAYEY SILT-CL/ML st, some fine to coarse ular to rounded) (till)			13	5.1'/6'	RC	M/S/M	NA	0	NA	Boring sloughed from 99.22 to 101.0
1 31 102 - 1 102 - 1 104 - 1		oring at 101.0 ft				·.					:	ft
106-												
112					AND ARE THE CONTRACTOR AND ARE							
116=												

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BORING N		PF	ROJECT NO: 15	5-0011	6.01	IPR	OFCT				
BORING L											ıscola, IL
	OCATION: South of plant along U.S. Rou					ORDINA	ATES: 9	8160	9.115 E, 1		
	CO: Boart-Longyear		DRILLER: D. D						LOGGED	BY: K.	Comire
	EQUIP: Rotosonic Drill		SCREEN INTE	_							1. Nienkerk
	ATER LEVEL: 691.21 ft (12/09/00)	- +	SCREEN MTL/		Stainles	s Steel	/0.010"	_	START		
BOREHOL			STICKUP: 1.70			,		_			urs): 16:28
	SING ELEVATION: 696.04 ft		G.S. ELEVATIO						FINISH D		
RISER DIA	/MTL/LGTH: 2"/Stainless Steel/6.94 ft		DEV. METHOD	S: Bai							urs): 8:40
				- -	SA	MPLE	S		PI	D	
DЕРТН	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
	Drilled to 17.0 ft See Log SB09/MW09D Lens of sand, brown, saturated, fine from 10.6-10.9 ft at this location										Boring sloughed from 15.24-17.0 ft

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BORING NO	GROUS D: SB09	WELL NO: MW09S	PROJEC	T NO: 15-001	16.01	PRO	JECT I	NAME:	Millen	nium / Tu	ıscola. I	
	- ·	Inches in the second	1			SA	MPLE	S		PI	D D	—
DEPTH	r	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	МЕТНОD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
1 1 1		4 AND 6 FA										
18-	Ena or Bo	oring at 17.0 ft										
20 - 6												
22-												
24-					والمستراب		and the same of th					
26-												
28-			2000 EDWOOD AVA		A CONTRACTOR OF THE PROPERTY O		- Landau Carta Car					
30-												
32 - 10					- Carallana		and the second s					
34-1												
36	: 2 of 2								The state of the s			Wngs

Page: 2 of 2



BORING N	D: SB10 WELL NO: MW10	PRO	JECT NO: 15	-0011	16	PR	OJECT	NAMI	E: Millenn	ium/ Tu	scola, IL
BORING LO	OCATION: ~400 ft SW of MW03S				coo	RDINA	TES: 9	77306	5.6 E, 1140	795.337	' N
DRILLING	CO: Boart-Longyear	DF	ILLER: D. D.	usche	∍r		•		LOGGED	BY: M.	Leddy
DRILLING I	EQUIP: Rotosonic Drill	sc	REEN INTER	RVAL	: 5.0 - 14.7	ft bgs	i		CHECKE	DBY: N	1. Nienkerk
STATIC WA	ATER LEVEL: 666.18 ft msl (7-23-01)	sc	REEN MTL/S	SLOT	: Stainles:	s Steel	/0.010"		START D	ATE: 7/	10/01
BOREHOL	E DIA: 6"	ST	ICKUP: 2.54	ft					START T	IME (ho	urs): 1245
TOP of CA	SING ELEVATION: 674.84 ft msl	G.	S. ELEVATIO	N: 67	2.30 ft ms	sl			FINISH D	ATE: 7/	10/01
RISER DIA	/MTL/LGTH: 2"/Stainless Steel/7.54 ft	DE	V. METHOD	S։ Տս	bmersible	pump)		FINISH T	IME (ho	urs): 1330
					SA	MPLE	S		PII	D	
рертн	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	метнор	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
# m 4 m											Grass Surface
2 2 4 4	0-2.6' TOPSOIL/FILL Silty clay, light brown, moist, trace fine to coarse sand 2.6-6.6' SILTY CLAY-CL Light brown, dry, with orange mottles, slight odor	1,1,1,1		1	5/5	RC	M	NA	0.0	NA	Grass Surface
10 10 10	Grades to dark brown at 4 to 5 ft 6.6-8.2' SILTY SAND-SM Light brown, wet, medium, with clay, some fine gravel Brown silt at 8 to 8.2 ft 8.2-10' SILTY CLAY-CL Light brown, moist to dry, with			2	3.8/5	RC	W/M	NA	0.0	NA	
12 14 14 14 14 14 14 14 14 14 14 14 14 14	gray clay inclusions 10-11' SILTY SAND-SM Light brown, wet, medium, with clay, some fine gravel 11-15' SILTY CLAY-CL Gray, moist, trace fine to medium gravel Grades to some gravel at 13ft			3	4.7/5	RC	W/M	NA	0.0	NA	
16-	End of Boring at 15ft										
-	· 1 of 1					(max.)			No · SI		

Page: 1 of 1



BORING N	O: SB11 WELL NO: MW11	DD	OJECT NO: 15	-004	i a	מפו) IECT	NI A BA	E: Millenn	in and CT	
	OCATION: East of the Area 1 and 2 Landf		.03ECT NO. 15	-001					0.0 E, 114:		***************************************
	CO: Boart-Longyear		ORILLER: D. Du	ısch		, Comp	1120.0	T	LOGGED		
	EQUIP: Rotosonic Drill		SCREEN INTER			11766	ae	-+			M. Nienkerk
	ATER LEVEL: 658.74 ft msi (7-23-01)		SCREEN MILES					\dashv	START D		
BOREHOL		-	STICKUP: 2.70		· Otalino	5 0.001		-			ours): 1500
	SING ELEVATION: 698.28 ft msl		G.S. ELEVATIO		15 58 ft m	ei			FINISH D		
	/MTL/LGTH: 2"/Stainless Steel/101,7 ft		DEV. METHODS		·····			-			ours): 0930
						MPLE		l	PI		T
DEPTH	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
# # 10	0-1.2' TOPSOIL. Dark brown, moist, w/ trace fine to coarse sand & roots 1.2-54.1' SILTY CLAY-CL Light brown, moist, some fine to medium sand, stiff (till) Clay with silt from 11 to 12 ft Seam of dark brown, moist, silty gravel at 12 to 12.4 ft Grades gray at 14.6 ft			1	2.2/5	RC	M	NA NA	NA	NA NA	No recovery due to protection of utilities
16-	- 1 of 6									`	

Page: 1 of 6



BORING NO	GROU D: SB11	WELL NO: MW11	PE	OJECT	NO: 15-001	116	ppr	LIFCT	NANE.	Millan	nium / Tu	iecola I	11
BOIGING IN	0.0571	THELLE INC. MIN TO	115	COLCI	140. 13-00	T		MPLE		191111611	P)		4 <u></u>
ОЕРТН	C	DESCRIPTION	-	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
18 18 18 18 18 18 18 18 18 18 18 18 18 1	1.2-54.1* (Continue	SILTY CLAY-CL d)				4	5/5	RC	M	NA	NA	0	
22-						(5)	5.7/5	RC:	M	NA	NA	0	Grain-size, total organic carbon, pH,
26 8						6	5.7/5	RC	М	NA	NA	0	and moisture sample at 24ft
30		vel at 34.0 ft				7	4.8/5	RC	М	NA	NA	0	
36—	: 2 of 6												

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BODING N	GROUP SERVICES	חחם ובכי	T N/O+ 4E 004	4.0	LBBC	LECT	418447	34:41			
BORING N	O: SB11 WELL NO: MW11	PROJECT	「NO: 15-001	16		MPLE		Millen	nium / Tu Pi		
DEPTH	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
38	1.2-54.1' SILTY CLAY-CL (Continued)			8	5/5	RC	М	NA	NA	0	
42				9	5/5	RC	М	NA	NA	0	
48	54.1-56.7' SAND-SP Gray, wet, poorly sorted, some			10	9/10	RC	М	NA	NA	0	
56-	gravel								Vo.: SI		

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BORING NO		NO: MW11	PROJECT	'NO: 15-001	116	PRO	JECT	NAME:	Millen	nium / Tu	ıscola	
							MPLE			PI		
DEPTH	DESCR	IPTION	GRAPHIC	WELL	NUMBER	RECOVERY	МЕТНОВ	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
62 - 19	56.7-63.3 ORGAI Dark brown, mois clay (interglacial) 63.3-66* CLAYEY Dark brown, mois gravel (angular to	T SILT-CL/ML tt, trace fine rounded) (till)			11	7.7/10	RC	M	NA	N A	0	
66	1/2" lens of green Grades to gray at 66-69.1' SAND-S Gray, wet, poorty gravel 69.1-72.5' CLAY Gray, moist, trace 72.5-75' ORGAN Dark brown, mois matter (interglacia	P sorted, some EY SILT-CL/ML e gravel IC SILT-OL sit, organic			12	9/10	RC	M	NA	NA	0	Grain-size, non volatile organic carbon, pH, and moisture sample at 69.5ft
76—23	4 of 6									vo.: SI		

Page: 4 of 6



DESCRIPTION TYPE OF THE PROPERTY OF THE PROPE	4		PSERVICES												
TS-77.7 SAND-SP Gray, wet, poorly sorted, with silt, gravel T3-8-9° CLAYEY SILT-CLNL. Gray, molet, some fine to coarse sand and gravel, till 13 10.9/10 RC M NA NA 0 Grain-size, total organic carbon, pH, moisture, and bulk density sample at 85ft 12.27 11 silty sand lens at 91ft 15 5.4/5 RC M NA NA 0	BORING NO	O: SB11	WELL NO: MW11	PROJECT	「NO: 15-0	116				Millen			1_		
78-77.7 SAND-SP Gray, wet, poorly sorted, with silt, trace gravel 77.7-78.6' SILTY SAND-SM Gray, wet, poorly sorted, mith silt, trace gravel 78-98' CLAYEY SILT-CL/ML Gray, moist, some fine to coarse sand and gravel, till 88-1-25 88-1-27 90-1-17 silty sand lens at 91ft 15 5.4/5 RC M NA NA 0 Grain-size, total organic carbon, PH, moisture, and bulk density sample at 85ft 15 5.4/5 RC M NA NA 0											3	Ι'n	PID		
Gray, wet, poorly sorted, with silt, trace gravel 77.7-78.6' SILTY SAND-SM Gray, wet, poorly sorted, trace gravel 78-8-8-8-8' CLAVEY SILT-CL/ML Gray, moist, some fine to coarse sand and gravel, till 80-8-8-8-8-8-8-8-8-8-8-8-8-8-8-8-8-8-8	DEPTH	1	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	METHOD	MOISTURE	BLOW CNT (6'	SCAN	HEADSPACE	REMARKS		
78.6-98° CLAYEY SILT-CL/MiL Gray, moist, some fine to coarse sand and gravel, till 13 10.9/10 RC M NA NA 0 Grain-size, total organic carbon, pH, moisture, and bulk density sample at 85ft 14 5/5 RC M NA NA 0 15 5.4/5 RC M NA NA 0	78-	Gray, wet trace grav	, poorly sorted, with silt, vel 'SILTY SAND-SM												
84- 86- 88- 	80-1-	gravel 78.6-98' (Grav, moi	CLAYEY SILT-CL/ML st, some fine to coarse			13	10.9/10	RC	M	Z	NA	0			
86 -	82 - 25 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1									Andre als des ministerios acromos des des des des des des des des des de		A PART AND			
1" silty sand lens at 91ft 92	27					14	5/5	RC	M	NA	NA	0	total organic carbon, pH, moisture, and bulk density sample at		
96-	92-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		nd lens at 91ft			15	5.4/5	RC	М	NA	NA	0			
	96-											·			

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	GROUI		· · · · · · · · · · · · · · · · · · ·							*****		
BORING NO	D: SB11	WELL NO: MW11	PROJECT	NO: 15-001	16				Millen	nium / Tu		L .
						SA	MPLE	:S		PI	D	
ОЕРТН	D	DESCRIPTION	GRAPHIC	WELL	NUMBER	RECOVERY	МЕТНОD	MOISTURE	BLOW CNT (6")	SCAN	HEADSPACE	REMARKS
98-	Gray, satu coarse gra	at 97.5 ft SAND-SW trated, with fine to avel (angular to			16	3.7/5	RC	M	NA	NA	0	
100	rounded)	.8' SILT-ML								-		Grain-size,
1 31 102 1	Gray, wet				17	7.5/10	RC	М	NA	NA	0	non volatile organic carbon, pH, and moisture sample at
104	Gray, mois	' CLAYEY SILT-CL/M st, some fine to coarse e gravel (angular to (till)										101ft
106	End of Bo	oring at 105 ft								-		
108 7 33				· · · · · · · · · · · · · · · · · · ·			ALLES TO THE TOTAL THE TOTAL TO AL TO THE TO					
110-							, and the second					
112-												
114 - 35							,					
116-	· 6 of 6									No · Si		

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APPENDIX C-2

WELL COMPLETION DIAGRAMS

Illinois Environmental Protection A	gency wen completion Report
SITE #: 0418080002 / ILD 005 078 126 CC	DUNTY: Douglas WELL#: MW01D
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois STATE PLANE	BOREHOLE #: SB01
COORDINATE: X 978260.807 E Y 1143144.488 N (or) LATITO	JDE: LONGITUDE:
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGISTRATION #: 2442
DRILLING CONTRACTOR: Boart-Longyear	DRILLER: D. Duscher
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIST: K. Comire
DRILLING METHOD: Rotosonic Drill	DRILLING FLUIDS (TYPE): Water
LOGGED BY: K. Comire	DATE STARTED: 11/04/00 DATE FINISHED: 11/04/00
REPORT FORM COMPLETED BY: M. Leddy	DATE: 02/27/2001
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft)
	(MSL) * (BGS)
	TOP OF PROTECTIVE CASING
F	
TYPE OF SURFACE SEAL: Concrete	679.18 0 GROUND SURFACE
	676.48 2.70 TOP OF ANNULAR SEALANT
TYPE OF ANNULAR SEALANT: Bentonite grout	
INSTALLATION METHOD: Tremie pipe	
SETTING TIME: + 24 hours	656.39 22.79 STATIC WATER LEVEL
	(AFTER COMPLETION)
TYPE OF BENTONITE SEAL-	∀ T
GRANULAR, PELLET, SLURRY, CHIPS) (CIRCLE ONE)	611.18 68,00 TOP OF SEAL
	90.00 30F OF SEAL
INSTALLATION METHOD: Poured	607.18
SETTING TIME: ~15 minutes	
TYPE OF SAND PACK: Quartz	
GRAIN SIZE: 40-60 U.S. Standard Series Sieve	
INSTALLATION METHOD: Poured	
TYPE OF BACKFILL MATERIAL: Not Applicable (IF APPLICABLE)	588.18 91.00 BOTTOM OF BOREHOLE
INSTALLATION METHOD: Not Applicable	* REFERENCED TO A NATIONAL GEODETIC VERTICAL DATUM
WELL CONSTRUCTION	CASING MEASUREMENTS
MATERIALS	DIAMETER OF BOREHOLE (in.) 6
(CIRCLE ONE)	ID OF RISER PIPE (in) 2
	PROTECTIVE CASING LENGTH (ft) 5
	RISER PIPE LENGTH (ft) 81.5
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER;	Steel BOTTOM OF SCREEN TO END CAP (ft) 0.3
RISER PIPE ABOVE W.T. (\$S304, \$S316, PTFE, PVC OR OTHER:	SCREEN LENGTH (1st SLOT TO LAST SLOT) (ft) 4.7
RISER PIPE BELOW W.T. SS304 SS316, PTFE, PVC OR OTHER:	TOTAL LENGTH OF CASING (ft) 86.5
SS304_3S316, PTFE, PVC OR OTHER:	SCREEN SLOT SIZE ** 0.010" * HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE

Illinois Environmental Protection A	Agency Well Completion Report	
SITE #: 0418080002 / ILD 005 078 128 CC	OUNTY: Douglas WELL #: MW01S	
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois	BOREHOLE #: SB01	
STATE PLANE		
COORDINATE: X 978255.170 E Y 1143144.279 N (or) LATITUDE:	:LONGITUDE:	
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGISTRATION #: 2442	
DRILLING CONTRACTOR: Boart-Longyear	DRILLER: D. Duscher	
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIST: K. Comire	
DRILLING METHOD: Rotosonic Drill	DRILLING FLUIDS (TYPE): Water	
LOGGED BY: K. Comire	DATE STARTED: 11/04/00 DATE FINISHED: 11/04	/00
REPORT FORM COMPLETED BY: M. Leddy	DATE: 02/27/2001	
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft)	
ANNUEAR OF AGE SETALES	(MSL) * (BGS)	
	TOP OF PROTECTIVE C	CASING
T		
TYPE OF SURFACE SEAL: Concrete	679.26 0 GROUND SURFACE	
	676.43 2.83 TOP OF ANNULAR SEA	LANT
TYPE OF ANNULAR SEALANT: Bentonite grout		
INSTALLATION METHOD: Tremie pipe		
SETTING TIME: + 24 hours	657.07 22.19 STATIC WATER LEVEL	
	(AFTER COMPLETION)	
TYPE OF BENTONITE SEAL-	T	
GRANULAR, PELLET, SLURRY CHIPS (CIRCLE ONE)		
(GROLL STL)	637.84 41.42 TOP OF SEAL	
INSTALLATION METHOD: Poured	632.84 45.42 TOP OF SANDPACK	
SETTING TIME: ~ 15 minutes		
	630.12 49.14 TOP OF SCREEN	•
TYPE OF SAND PACK: Quartz		
TYPE OF SAND PACK: Quartz GRAIN SIZE: 40-60 U.S. Standard Series Sleve	625.42 53.84 BOTTOM OF SCREEN	
INSTALLATION METHOD: Poured	625.12 54.14 BOTTOM OF WELL	
TOT OF PACIFIE MATERIAL. Not Applicable	ESE SE SEA DO POTTOM DE POREUO	
TYPE OF BACKFILL MATERIAL: Not Applicable (IF APPLICABLE)	625.06 54.20 BOTTOM OF BOREHO	TE
INSTALLATION METHOD: Not Applicable	* REFERENCED TO A NATIONAL GEODETIC VERTICAL DA	ATUM
WELL CONSTRUCTION	CASING MEASUREMENTS	
MATERIALS	DIAMETER OF BOREHOLE (in.)	6
(CIRCLE ONE)	ID OF RISER PIPE (in) PROTECTIVE CASING LENGTH (ft)	2
		5 51.12
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER: Steel	BOTTOM OF SCREEN TO END CAP (ft)	0.3
RISER PIPE ABOVE W.T. SS304_SS316, PTFE, PVC OR OTHER:	SCREEN LENGTH (1st SLOT TO LAST SLOT) (ft)	4.7
RISER PIPE BELOW W.T. SS304-SS316, PTFE, PVC OR OTHER:		56.12
SCREEN SS304, SS316, PTFE, PVC OR OTHER:		0.010"
	** HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE	

Illinois Environmental Protection A	agency well Completion Report	
SITE #: 0418080002 / ILD 005 078 126 C	COUNTY: Douglas WELL #: MW02D	
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois STATE	BOREHOLE #: SB0	2
PLANE COORDINATE: X 978299.197 E Y 1141690.769 N (or) LATITUDE:	: LONGITUDE:	
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGISTRATION #: 2442	
DRILLING CONTRACTOR: Boart-Longyear	DRILLER: D. Duscher	
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIST: K. Comire	
DRILLING METHOD: Rotosonic Drill	DRILLING FLUIDS (TYPE): Water	
LOGGED BY: K. Comire		1/00
REPORT FORM COMPLETED BY: M. Leddy	DATE: 2/27/01	
THE SOCK FORM COMMERCED DIT.	DATE: LETTO,	44,
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft)	
	(MSL) * (BGS)	
· · · · · · · · · · · · · · · · · · ·	TOP OF PROTECTIVE	CASING
	676.44 -2.00 TOP OF RISER PIPE	
TYPE OF SURFACE SEAL: Concrete	674.44 0 GROUND SURFACE	
	671.94 2.50 TOP OF ANNULAR SE	ALANT
TYPE OF ANNULAR SEALANT: Bentonite/grout		
INSTALLATION METHOD: Tremie pipe	·	
SETTING TIME: + 24 hours	657.22 17.22 STATIC WATER LEVE (AFTER COMPLETION)	L
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
TYPE OF BENTONITE SEAL- GRANULAR, PELLET, SLURRY, CHIPS)	YT .	
(CIRCLE ONE)	613.94 60.50 TOP OF SEAL	
INSTALLATION METHOD: Poured SETTING TIME: ~ 15 minutes	608.64 65.80 TOP OF SANDPACK	
SETTING TIME: ~ 15 minutes		
	607.07 67.37 TOP OF SCREEN	
TYPE OF SAND PACK: Quartz		
GRAIN SIZE: 40-60 U.S. Standard Series Sieve	602.37 72.07 BOTTOM OF SCREEN	1
INSTALLATION METHOD: Poured	602.07 72.37 BOTTOM OF WELL	
TYPE OF BACKFILL MATERIAL: Not Applicable	602.07 75.00 BOTTOM OF BOREHO	OLE
(IF APPLICABLE) INSTALLATION METHOD: Not Applicable	* REFERENCED TO A NATIONAL GEODETIC VERTICAL (nathre
ING (ASSATION INSETTIOD. ING. Applicable	ALI LABOLD TO A NATIONAL GEODETIC VERTICAL I	DATOM
WELL CONSTRUCTION	CASING MEASUREMENTS	
MATERIALS	DIAMETER OF BOREHOLE (in.)	6
(CIRCLE ONE)	ID OF RISER PIPE (In)	2
	PROTECTIVE CASING LENGTH (ft)	5
	RISER PIPE LENGTH (ft)	69.37
PROTECTIVE CASING SS304, SS316, PTFE, PVC OROTHER Steel	BOTTOM OF SCREEN TO END CAP (ft)	0.3
RISER PIPE ABOVE W.T. SS304_8S316, PTFE, PVC OR OTHER:	SCREEN LENGTH (1st SLOT TO LAST SLOT) (ft)	4.7
RISER PIPE BELOW W.T. SS304, 8S316, PTFE, PVC OR OTHER: SCREEN SS304, 8S316, PTFE, PVC OR OTHER:	TOTAL LENGTH OF CASING (ft) SCREEN SLOT SIZE **	74.37
Parities Management of the Control o	" HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE	0.010"

Illinois Environmental Protection <i>i</i>	Agency Well Completion Report	
SiTE #: 0418080002 / iLD 005 078 126	OUNTY: Douglas WELL #: I	WW02S
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois	BOREHO	LE #: SB02
STATE PLANE COORDINATE: X 978306.947 E Y 1141684.690 N (or) LATITUDE	: LONGITUDE:	
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGISTRATION #: 2442	*
DRILLING CONTRACTOR: Boart-Longyear	DRILLER: D. Duscher	
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIST: K. Comire	
DRILLING METHOD: Rotosonic Drill	DRILLING FLUIDS (TYPE): Water	

LOGGED BY: K. Comire		ED: <u>11/03/00</u>
REPORT FORM COMPLETED BY: M. Leddy	DATE: 02/27/01	
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft)	
	(MSL) * (BGS)	
	TOP OF F	PROTECTIVE CASING
	676.50 -2.00 TOP OF F	RISER PIPE
	<u> </u>	NOLKT II L
TYPE OF SURFACE SEAL: Concrete	674.50 0 GROUND	SURFACE
	NA NA TOP OF	ANNULAR SEALANT
TYPE OF ANNULAR SEALANT: Not Applicable		
INSTALLATION METHOD: Not Applicable		
SETTING TIME: Not Applicable		VATER LEVEL OMPLETION)
		·······,
TYPE OF BENTONITE SEAL-	MT.	
GRANULAR, PELLET, SLURRY(CHIPS) (CIRCLE ONE)	670.50 4.00 TOP OF	SFAI
	<u> </u>	
INSTALLATION METHOD: Poured	665.80 8.70 TOP OF	SANDPACK
SETTING TIME: ~ 15 minutes	·	
	664.43 10.67 TOP OF	SCREEN
TYPE OF SAND PACK: Quartz		,
GRAIN SIZE: 40-60 U.S. Standard Series Sieve	654.73 19.77 BOTTON	OF SCREEN
INSTALLATION METHOD: Poured		OF WELL
TYPE OF BACKFILL MATERIAL: Not Applicable	654.00 20.50 BOTTON	OF BOREHOLE
(IF APPLICABLE)	Bellever verbiede del del marginal	
INSTALLATION METHOD: Not Applicable	* REFERENCED TO A NATIONAL GEODET	TIC VERTICAL DATUM
WELL CONSTRUCTION	CASING MEASUREME	NTS
MATERIALS	DIAMETER OF BOREHOLE (in.)	6
(CIRCLE ONE)	ID OF RISER PIPE (in)	2
	PROTECTIVE CASING LENGTH (ft)	5
	RISER PIPE LENGTH (ft)	12.07
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER Steel	BOTTOM OF SCREEN TO END CAP (ft)	0,3
RISER PIPE ABOVE W.T. \$\$304_85316, PTFE, PVC OR OTHER:	SCREEN LENGTH (1st SLOT TO LAST SLO	T) (ft) 9.7
RISER PIPE BELOW W.T. SS304_8S316, PTFE, PVC OR OTHER:	TOTAL LENGTH OF CASING (ft)	22.07
SCREEN SS304, SS316, PTFE, PVC OR OTHER:	SCREEN SLOT SIZE **	0.010"
	** HAND-SLOTTED WELL SCREENS ARE UNA	CCEPTABLE

Illinois Environmental Protection	Agency Well Completion Report	MASSIER
SITE #: 0418080002 / ILD 005 078 126	COUNTY: Douglas WELL#: MW03D	
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois	BOREHOLE #: SB03	
STATE PLANE COORDINATE: X 977491.123 E Y 1140927.766 N (or) LATITUDI	DE: LONGITUDE:	
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGISTRATION #: 2442	
DRILLING CONTRACTOR: Boart-Longyear	DRILLER: D. Duscher	
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIST: K. Comire	
DRILLING METHOD: Rotosonic Drill	DRILLING FLUIDS (TYPE): Water	
LOGGED BY: K. Comire	DATE STARTED: 11/15/00 DATE FINISHED: 11/15/00	0
REPORT FORM COMPLETED BY: M. Leddy	DATE: 02/27/01	
AMMIN AR CDACE DETAILS	ELEVATIONS DEDTUS (04.6)	
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft) (MSL) * (BGS)	
	TOP OF PROTECTIVE CA	SING
· T	PARAMETER STATE OF THE STATE OF	
F	675.63 -2.32 TOP OF RISER PIPE	
TYPE OF SURFACE SEAL: Concrete	673.31 0 GROUND SURFACE	
	669.41 3.90 TOP OF ANNULAR SEALA	ANT
TYPE OF ANNULAR SEALANT: Bentonite grout		
INSTALLATION METHOD: Tremie pipe		
SETTING TIME: + 24 hours	656.54 16.77 STATIC WATER LEVEL (AFTER COMPLETION)	
	L L	
TYPE OF BENTONITE SEAL-	1\text{\tau}T	
GRANULAR, PELLET, SLURRY CHIPS) (CIRCLE ONE)	608.31 65.00 TOP OF SEAL	
INSTALLATION METHOD: Poured		
SETTING TIME: 15 minutes		
TYPE OF SAND PACK: Quartz		
GRAIN SIZE: 40-60 U.S. Standard Series Sieve		
INSTALLATION METHOD: Poured	594.41 78.90 BOTTOM OF WELL	
TYPE OF BACKFILL MATERIAL: Not Applicable	587.81 85.50 BOTTOM OF BOREHOLE	:
(IF APPLICABLE)		
INSTALLATION METHOD: Not Applicable	* REFERENCED TO A NATIONAL GEODETIC VERTICAL DATA	UM
WELL CONSTRUCTION	CASING MEASUREMENTS	
MATERIALS	DIAMETER OF BOREHOLE (in.) 6	3
(CIRCLE ONE)	ID OF RISER PIPE (in) 2	2
	PROTECTIVE CASING LENGTH (ft) 5	5
	RISER PIPE LENGTH (ft) 76.	.22
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER: Steel		
RISER PIPE ABOVE W.T. SS304 SS316, PTFE, PVC OR OTHER:		.7
RISER PIPE BELOW W.T. SS304, SS316, PTFE, PVC OR OTHER:	TOTAL LENGTH OF CASING (ft) 81.	
SCREEN SS304>SS316, PTFE, PVC OR OTHER:	SCREEN SLOT SIZE ** 0.0' ** HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE	10 1

Illinois Environmental Protection	Agency i	wen completion	on kepon	
SITE #: 0418080002 / ILD 005 078 126	COUNTY:	Douglas	WELL#: MW03S	<u></u>
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois			BOREHOLE #:	SB03
STATE PLANE				
COORDINATE: X 977487.159 E Y 1140923.546 N (or) LATITUD	E:	LC	NGITUDE:	
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGIST	RATION #:	2442	
DRILLING CONTRACTOR: Boart-Longyear	DRILLER:	D. Duscher		
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIS	T: K. Comire		
DRILLING METHOD: Rotosonic Drill	DRILLING F	FLUIDS (TYPE): W	ater	
LOGGED BY: K. Comire	DATE STAF	RTED: 11/16/0	O DATE FINISHED:	11/16/00
REPORT FORM COMPLETED BY: M. Leddy	DATE:	02/27/01		
	*			
ANNULAR SPACE DETAILS		ELEVATIONS DI		
		(MSL) * (I	BGS)	
-		***************************************	TOP OF PROTECT	IVE CASING
		675.54	-2.13 TOP OF RISER PI	ΡE
<u> </u>			THE STREET	
TYPE OF SURFACE SEAL: Concrete	Y >>>	673.41	0 GROUND SURFAC	E
		NA	NA TOP OF ANNULAR	R SEALANT
TYPE OF ANNULAR SEALANT: Not Applicable			,	
INSTALLATION METHOD: Not Applicable				
SETTING TIME: Not Applicable		669,37	4.04 STATIC WATER L (AFTER COMPLETIO	
(TVDF OF PENTONIEF OF AL		·		
TYPE OF BENTONITE SEAL-				
GRANULAR, PELLET, SLURRY, (CHIPS) (CIRCLE ONE)		670,41	3.00 TOP OF SEAL	
INSTALLATION METHOD: Poured		668.82	4,59 TOP OF SANDPA	CK
SETTING TIME: ~ 15 minutes				i
		668.82	4.59 TOP OF SCREEN	
TYPE OF SAND PACK: Quartz				
GRAIN SIZE: 40-60 U.S. Standard Series Sleve		659.12	14.29 BOTTOM OF SCR	EEN
INSTALLATION METHOD: Poured		658.82	14.59 BOTTOM OF WEL	L,
TYPE OF BACKFILL MATERIAL: Not Applicable		658.41	15.00 BOTTOM OF BOR	FHOI F
(IF APPLICABLE)		030,41	15,80 BOTTOM OF BOTT	LHOLL
INSTALLATION METHOD: Not Applicable		* REFERENCED TO) A NATIONAL GEODETIC VERTIC	AL DATUM
WELL CONSTRUCTION		C	ASING MEASUREMENTS	
MATERIALS		DIAMETER OF BORE	HOLE (in.)	6
(CIRCLE ONE)		ID OF RISER PIPE (II		2
		PROTECTIVE CASIN	Y	5
	1	RISER PIPE LENGTH		6.72
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER Steel	<u>'</u>	BOTTOM OF SCREE	· `	0.3
RISER PIPE ABOVE W.T. S\$304 \$\$316, PTFE, PVC OR OTHER:			St SLOT TO LAST SLOT) (ft)	9.7
RISER PIPE BELOW W.T. S\$304_\$S316, PTFE, PVC OR OTHER:		TOTAL LENGTH OF	· · · · · · · · · · · · · · · · · · ·	16.72
SCREEN SS304, SS316, PTFE, PVC OR OTHER:	'	** HAND-SLOTTED WEI	LL SCREENS ARE UNACCEPTABL	0.010"
	**************************************	TAN CELLOCKETT		

Illinois Environmental Protection	Agency \	Well Comple	etion Rep	oort	
SITE #: 0418080002 / ILD 005 078 126	COUNTY:	Douglas		WELL #: MW04D	
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois				BOREHOLE #:	SB04
STATE PLANE COORDINATE: X 977244.444 E Y 1141453.441 N (or) LATITUDE		******	LONGITUDE	:	
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGIST	TRATION #:		2442	
DRILLING CONTRACTOR: Boart-Longyear	DRILLER:	D. Duscher			
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIS	ST: K. Comire			
DRILLING METHOD: Rotosonic Drill	DRILLING	FLUIDS (TYPE):	Water		
LOGGED BY: K. Comire	DATE STAI	RTED: 11/0	08/00 DA	TE FINISHED:	11/09/00
REPORT FORM COMPLETED BY: M. Leddy	DATE:	02/27/01			
ANNULAR SPACE DETAILS		ELEVATIONS	DEPTHS	(.01 ft)	
		(MSL) *	(BGS)	•	
	·	****		TOP OF PROTECT	IVE CASING
T		681.29	-2.04	TOP OF RISER PIP	·
			-&.U4	TOF OF KISEK PIP	- Lin
TYPE OF SURFACE SEAL: Concrete	YM	679.25		GROUND SURFAC	E
		674.00	5.25	TOP OF ANNULAR	SEALANT
TYPE OF ANNULAR SEALANT: Bentonite grout	19				
INSTALLATION METHOD: Tremie pipe SETTING TIME: + 24 hours		656.03	23.22	STATIC WATER LI	=VEL
				(AFTER COMPLETION	
TYPE OF BENTONITE SEAL-					
GRANULAR, PELLET, SLURRY, CHIPS	\mathcal{A}				
(CIRCLE ONE)		605.75	73.50	TOP OF SEAL	
INSTALLATION METHOD: Poured	\boxtimes	600.75	78.50	TOP OF SANDPAC	ж
SETTING TIME: - 15 minutes					
		580.45	98.80	TOP OF SCREEN	
TYPE OF SAND PACK: Quartz				•	
GRAIN SIZE: 40-60 U.S. Standard Series Sleve		575.75	103.50	BOTTOM OF SCR	EEN
INSTALLATION METHOD: Poured		575.45	103.80	BOTTOM OF WEL	L,
TYPE OF BACKFILL MATERIAL: Not Applicable		575.45	103.80	BOTTOM OF BOR	EHOLE
(IF APPLICABLE)					
INSTALLATION METHOD: Not Applicable		* REFERENCE	ED TO A NATIO	VAL GEODETIC VERTIC	AL DATUM
WELL CONSTRUCTION			CASING ME	EASUREMENTS	
MATERIALS		DIAMETER OF B	···		6
(CIRCLE ONE)		ID OF RISER PIP	***************************************		2
		PROTECTIVE CA	SING LENGT	'H' (ft)	5
		RISER PIPE LEN	GTH (ft)		100,84
PROTECTIVE CASING SS304, SS316, PTFE, PVC OROTHER Steel		BOTTOM OF SC			0.3
RISER PIPE ABOVE W.T. \$\$304,\$8316, PTFE, PVC OR OTHER:		SCREEN LENGT			4.7
RISER PIPE BELOW W.T. SS304, SS316, PTFE, PVC OR OTHER:		TOTAL LENGTH		(ft)	105.84
SS304, SS316, PTFE, PVC OR OTHER:		SCREEN SLOT S		NS ARE LINACCEPTARE	0.010"

Illinois Environmental Protection	Agency Well Completion Report	
3ITE#: 0418080002 / ILD 005 078 126	COUNTY: Douglas WELL#: MW04S	
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois	BOREHOLE#: SB04	
STATE PLANE COORDINATE: X 977251.253 E Y 1141452.904 N (or) LATITUDE	E: LONGITUDE:	
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGISTRATION #: 2442	
DRILLING CONTRACTOR: Boart-Longyear	DRILLER: D. Duscher	
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIST: K. Comire	
DRILLING METHOD: Rotosonic Drill	DRILLING FLUIDS (TYPE): Water	
LOGGED BY: K. Comire	DATE STARTED: 11/18/00 DATE FINISHED: 11/18/00	
REPORT FORM COMPLETED BY: M. Leddy	DATE: 02/27/01	
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft)	_
	(MSL)* (BGS)	
·	TOP OF PROTECTIVE CASI	NG
	681.06 1.93 TOP OF RISER PIPE	
TYPE OF SURFACE SEAL: Concrete	679.13 0 GROUND SURFACE	
TIPE OF SURFACE SEAL: COINGEE	NA NA TOP OF ANNULAR SEALAN	JT.
TYPE OF ANNULAR SEALANT: Not Applicable		.
INSTALLATION METHOD: Not Applicable		
SETTING TIME: Not Applicable	668.06 11.07 STATIC WATER LEVEL	
	(AFTER COMPLETION)	
TYPE OF BENTONITE SEAL-	T T	
GRANULAR, PELLET, SLURRY, CHIPS (CIRCLE ONE)	676.13 3.00 TOP OF SEAL	
	×	
INSTALLATION METHOD: Poured	674.21 4.92 TOP OF SANDPACK	
SETTING TIME: ~ 15 minutes		
	674.21 4.92 TOP OF SCREEN	
TYPE OF SAND PACK: Quartz		
GRAIN SIZE: 40-60 U.S. Standard Series Sleve	664.51 14.62 BOTTOM OF SCREEN	
INSTALLATION METHOD: Poured	664.21 14.92 BOTTOM OF WELL	
TYPE OF BACKFILL MATERIAL: Not Applicable	664.13 15.00 BOTTOM OF BOREHOLE	
(IF APPLICABLE) INSTALLATION METHOD: Not Applicable	* REFERENCED TO A NATIONAL GEODETIC VERTICAL DATUM	A
WELL CONSTRUCTION	CASING MEASUREMENTS	
MATERIALS	DIAMETER OF BOREHOLE (in.) 6	
(CIRCLE ONE)	ID OF RISER PIPE (in) 2	
	PROTECTIVE CASING LENGTH (ft) 5	
F	RISER PIPE LENGTH (ft) 6.85	\Box
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER Steel	BOTTOM OF SCREEN TO END CAP (ft) 0.3	
RISER PIPE ABOVE W.T. SS304, 6S316, PTFE, PVC OR OTHER:	SCREEN LENGTH (1st SLOT TO LAST SLOT) (fit) 9.7	
RISER PIPE BELOW W.T. \$5304,85316, PTFE, PVC OR OTHER:	TOTAL LENGTH OF CASING (ft) 16.85	<u>;</u>
SCREEN SS302)SS316, PTFE, PVC OR OTHER:	SCREEN SLOT SIZE ** 0.010 ** HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE	

Illinois Environmental Protection A	Agency Well Completion Report
SITE #: 0418080002 / ILD 005 078 126	COUNTY: Douglas WELL#: MW05D
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois	BOREHOLE #: SB05
STATE PLANE COORDINATE: X 975781.687 E Y 1141559.080 N (or) LATITUDE	E: LONGITUDE:
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGISTRATION #: 2442
DRILLING CONTRACTOR: Boart-Longyear	DRILLER: D. Duscher
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIST: K. Comire
DRILLING METHOD: Rotosonic Drill	DRILLING FLUIDS (TYPE): Water
LOGGED BY: K. Comire	
REPORT FORM COMPLETED BY: M. Leddy	DATE STARTED: 11/16/00 DATE FINISHED: 11/17/00 DATE: 02/27/01
REPORT FORM COMPLETED BT: M. Leddy	DATE. UZZTOT
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft)
	(MSL) * (BGS)
· · · · · · · · · · · · · · · · · · ·	TOP OF PROTECTIVE CASING
TYPE OF SURFACE SEAL: Concrete	672.33 0 GROUND SURFACE
	667.73 4.60 TOP OF ANNULAR SEALANT
TYPE OF ANNULAR SEALANT: Bentonite grout	
INSTALLATION METHOD: Tremie pipe	
SETTING TIME: + 24 hours	655.94 16.39 STATIC WATER LEVEL
TYPE OF BENTONITE SEAL-	(AFTER COMPLETION)
GRANULAR, PELLET, SLURRY, CHIPS	
(CIRCLE ONE)	605.63 66.70 TOP OF SEAL
NOTAL ATION METHOD.	SOURCE TO SOURCE SAMPLINGS
INSTALLATION METHOD: Poured SETTING TIME: - 15 minutes	600.63 71.70 TOP OF SANDPACK
JETTING I MIL.	
	591.83 80.50 TOP OF SCREEN
TYPE OF SAND PACK: Quartz	
GRAIN SIZE: 40-50 U.S. Standard Series Sleve INSTALLATION METHOD: Poured	589.63 82.70 BOTTOM OF SCREEN 589.33 83.00 BOTTOM OF WELL
INSTALLATION METHOD: Poured L	
TYPE OF BACKFILL MATERIAL: Not Applicable (IF APPLICABLE)	586.33 86.00 BOTTOM OF BOREHOLE
INSTALLATION METHOD: Not Applicable	* REFERENCED TO A NATIONAL GEODETIC VERTICAL DATUM
WELL CONSTRUCTION	CASING MEASUREMENTS
MATERIALS	DIAMETER OF BOREHOLE (in.) 6
(CIRCLE ONE)	ID OF RISER PIPE (in) 2
·	PROTECTIVE CASING LENGTH (ft) 5
	RISER PIPE LENGTH (ft) 82.65
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER Steel	BOTTOM OF SCREEN TO END CAP (ft) 0.3
RISER PIPE ABOVE W.T. \$304 88316, PTFE, PVC OR OTHER:	SCREEN LENGTH (1st SLOT TO LAST SLOT) (ft) 2.2
RISER PIPE BELOW W.T. \$5304_85316, PTFE, PVC OR OTHER:	TOTAL LENGTH OF CASING (ft) 85.15
SCREEN SS304, SS316, PTFE, PVC OR OTHER:	SCREEN SLOT SIZE ** 0.010"
	** HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE

Illinois Environmental Protection A	gency well completion Report
SITE #: 0418080002 / ILD 005 078 126 CO	UNTY: Douglas WELL #: MW05S
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois	BOREHOLE #: SB05
STATE PLANE COORDINATE: X 975780.923 E Y 1141564.346 (or) LATITUDE:	LONGITUDE:
· · · · · · · · · · · · · · · · · · ·	ILL REGISTRATION #: 2442
·	DRILLER: D. Duscher
	GEOLOGIST: K. Comire
	DRILLING FLUIDS (TYPE): Water
	DATE STARTED: 11/17/00 DATE FINISHED: 11/17/00
	DATE: 02/28/01
NEFORT FORM COMPLETED BY: Mr. Leddy	NOTE: OTENOI
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft)
	(MSL) * (BGS)
	TOP OF PROTECTIVE CASING
	674.47 -2.21 TOP OF RISER PIPE
TYPE OF SURFACE SEAL: Concrete	672.26 0 GROUND SURFACE
TYPE OF ANNH AD SEALANT. New York	NA NA TOP OF ANNULAR SEALANT
TYPE OF ANNULAR SEALANT: Not Applicable	
INSTALLATION METHOD: Not Applicable SETTING TIME: Not Applicable	663.57 8.69 STATIC WATER LEVEL
and the same	(AFTER COMPLETION)
TYPE OF BENTONITE SEAL-	
GRANULAR, PELLET, SLURRY, CHIPS	<u> </u>
(CIRCLE ONE)	669.26 3.00 TOP OF SEAL
INSTALLATION METHOD: Poured	658.76 13.50 TOP OF SANDPACK
SETTING TIME: - 15 minutes	
	657.90 14.36 TOP OF SCREEN
	14.00 TOP OF GURER
TYPE OF SAND PACK: Quartz GRAIN SIZE: 40-60 U.S. Standard Series Sieve	648.20 24.06 BOTTOM OF SCREEN
INSTALLATION METHOD: Poured	647.90 24.36 BOTTOM OF WELL
TYPE OF BACKFILL MATERIAL: Not Applicable (FAPPLICABLE)	647.26 25.00 BOTTOM OF BOREHOLE
INSTALLATION METHOD: Not Applicable	* REFERENCED TO A NATIONAL GEODETIC VERTICAL DATUM
·	
WELL CONSTRUCTION	CASING MEASUREMENTS
MATERIALS	DIAMETER OF BOREHOLE (in.) 6
(CIRCLE ONE)	ID OF RISER PIPE (in) 2
	PROTECTIVE CASING LENGTH (ft) 5
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER Steel	RISER PIPE LENGTH (ft) 16.57 BOTTOM OF SCREEN TO END CAP (ft) 0.3
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER Steel RISER PIPE ABOVE W.T. SS304, SS316, PTFE, PVC OR OTHER:	BOTTOM OF SCREEN TO END CAP (ft) 0.3 SCREEN LENGTH (1st SLOT TO LAST SLOT) (ft) 9.7
RISER PIPE BELOW W.T. \$3304 SS316, PTFE, PVC OR OTHER:	TOTAL LENGTH OF CASING (ft) 26.57
SCREEN \$304 SS316, PTFE, PVC OR OTHER:	SCREEN SLOT SIZE ** 0.010"
	** HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE

Illinois Environmental Protection A	gency Well Completion Ro	eport
SITE #: 0418080002 / ILD 005 078 126 Co	OUNTY: Douglas	WELL#: MW06D
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois		BOREHOLE #: SB06
STATE PLANE COORDINATE: X 975477.039 E Y 1142127.639 N (or) LATITUDE:	LONG	HTUDE:
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGISTRATION #:	2442
DRILLING CONTRACTOR: Boart-Longyear	DRILLER: D. Duscher	
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIST: K. Comire	
DRILLING METHOD: Rotosonic Drill	DRILLING FLUIDS (TYPE): Water	
LOGGED BY: K. Comire	DATE STARTED: 11/05/00	DATE FINISHED: <u>11/05/00</u>
REPORT FORM COMPLETED BY: M. Leddy	DATE: 02/28/01	
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS	(.01 ft)
· · · · · · · · · · · · · · · · · · ·	(MSL) * (BGS)	(,
		TOP OF PROTECTIVE CASING
	664.20 4.70	TOO OF DICED NIDE
	664.20 -1.70	TOP OF RISER PIPE
TYPE OF SURFACE SEAL: Concrete	662.50 0	GROUND SURFACE
	659.70 2.80	TOP OF ANNULAR SEALANT
TYPE OF ANNULAR SEALANT: Bentonite grout		
INSTALLATION METHOD: Tremie pipe	655.83 6.67	ČTATIČ MIATED I PUPU
SETTING TIME: + 24 hours	655.83 6.67	STATIC WATER LEVEL (AFTER COMPLETION)
TYPE OF BENTONITE SEAL-		
GRANULAR, PELLET, SLURRY, CHIPS	\mathcal{M}	
(CIRGLE ONE)	606.50 56.00	TOP OF SEAL
INSTALLATION METHOD: Poured	601.50 61.00	TOP OF SANDPACK
SETTING TIME: ~15 minutes		
	595.90 66.60	TOP OF SCREEN
TYPE OF SAND PACK: Quartz		
GRAIN SIZE: 40-60 U.S. Standard Series Sleve	591.20 71.30	BOTTOM OF SCREEN
INSTALLATION METHOD: Poured	590.90 71.60	BOTTOM OF WELL
TYPE OF BACKFILL MATERIAL: Not Applicable	587,50 75,00	BOTTOM OF BOREHOLE
(IF APPLICABLE)	PROPERTY AND ASSESSED.	
INSTALLATION METHOD: Not Applicable	* REFERENCED TO A NAT	IONAL GEODETIC VERTICAL DATUM
WELL CONSTRUCTION	CASING	WEASUREMENTS
MATERIALS	DIAMETER OF BOREHOLE	
(CIRCLE ONE)	ID OF RISER PIPE (In)	2
	PROTECTIVE CASING LEN	GTH (ft) 5
	RISER PIPE LENGTH (ft)	68.3
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER Steel	BOTTOM OF SCREEN TO E	
RISER PIPE ABOVE W.T. \$3304_88316, PTFE, PVC OR OTHER:	SCREEN LENGTH (1st SLOT	
RISER PIPE BELOW W.T. \$3304_88316, PTFE, PVC OR OTHER:	TOTAL LENGTH OF CASIN	
SCREEN S3304 SS316, PTFE, PVC OR OTHER:	SCREEN SLOT SIZE ** ** HAND-SLOTTED WELL SCRI	0.010"

Illinois Environmental Protection Agency Well Completion Report		
SITE #: 0418080002 / ILD 005 078 126 C	OUNTY: Douglas WELL #: MW06S	
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois STATE	BOREHOLE #: SB06	
PLANE COORDINATE: X 975474.709 E Y 1142133.447 N (or) LATITUDE:	LONGITUDE:	
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGISTRATION #: 2442	
DRILLING CONTRACTOR: Boart-Longyear	DRILLER: D. Duscher	
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIST: K. Comire	
DRILLING METHOD: Rotosonic Drill	DRILLING FLUIDS (TYPE): Water	
LOGGED BY: K. Comire	DATE STARTED: 11/05/00 DATE FINISHED: 11/06/00	
REPORT FORM COMPLETED BY: M. Leddy	DATE: 02/28/01	
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft)	
	(MSL) * (BGS)	
·	TOP OF PROTECTIVE CASING	
	664.46 -2.04 TOP OF RISER PIPE	
TYPE OF SURFACE SEAL: Concrete	662.42 0 GROUND SURFACE	
TIPE OF SURFACE SEAL.	659.22 3.20 TOP OF ANNULAR SEALANT	
TYPE OF ANNULAR SEALANT: Bentonite grout	<u> </u>	
INSTALLATION METHOD: Tremle pipe		
SETTING TIME: + 24 hours	655.43 6.99 STATIC WATER LEVEL	
	(AFTER COMPLETION)	
TYPE OF BENTONITE SEAL-	VT	
GRANULAR, PELLET, SLURRY, CHIPS (CIRCLE ONE)	629.92 02.50 TOP OF SEAL	
	638.92 23.50 TOP OF SEAL	
INSTALLATION METHOD: Poured	633.92 28.50 TOP OF SANDPACK	
SETTING TIME: ~ 15 minutes		
	632.42 30.00 TOP OF SCREEN	
TYPE OF SAND PACK: Quartz		
GRAIN SIZE: 40-60 U.S. Standard Series Sieve	622.72 39.70 BOTTOM OF SCREEN	
INSTALLATION METHOD: Poured	622.42 40.00 BOTTOM OF WELL	
TYPE OF BACKFILL MATERIAL: Not Applicable	622.42 40.00 BOTTOM OF BOREHOLE	
(IF APPLICABLE)	* DESERBENCED TO A NATIONAL CEODETIC VERTICAL DATING	
INSTALLATION METHOD: Not Applicable	* REFERENCED TO A NATIONAL GEODETIC VERTICAL DATUM	
WELL CONSTRUCTION	CASING MEASUREMENTS	
MATERIALS	DIAMETER OF BOREHOLE (in.) 6	
(CIRCLE ONE)	ID OF RISER PIPE (in) 2	
	PROTECTIVE CASING LENGTH (ft) 5	
	RISER PIPE LENGTH (ft) 32.04	
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER Steel	BOTTOM OF SCREEN TO END CAP (ft) 0.3	
RISER PIPE ABOVE W.T. \$3304_85316, PTFE, PVC OR OTHER:	SCREEN LENGTH (1st SLOT TO LAST SLOT) (ft) 9.7	
RISER PIPE BELOW W.T. \$304 \$316, PTFE, PVC OR OTHER:	TOTAL LENGTH OF CASING (ft) 42.04	
SCREEN SS304_SS316, PTFE, PVC OR OTHER:	SCREEN SLOT SIZE ** 0.010" ** HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE	

Illinois Environmental Protection	Agency \	Well Comple	etion Rep	ort	25-100
SITE #: 0418080002 / ILD 005 078 126	COUNTY:	Douglas		WELL#: MW0	7D
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, IL				BOREHOLE #: 5	3B07
STATE PLANE COORDINATE: X 975434.138 E Y 1142472.021 N LATITUDE	:		LONGITUDE	:	EACHE AND THE PARTY AND THE PA
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGIST	RATION #:		2442	
DRILLING CONTRACTOR: Boart-Longyear	DRILLER:	D. Duscher			
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIS	T: K. Comire			
DRILLING METHOD: Rotosonic Drill	DRILLING F	-LUIDS (TYPE):	Water		
LOGGED BY: K. Comire	DATE STAF	RTED: 11/6	06/00 DA	TE FINISHED:	11/07/00
REPORT FORM COMPLETED BY: M. Leddy	DATE:	02/28/01		===+0+0+	
	h		W.C.		
ANNULAR SPACE DETAILS		ELEVATIONS		(.01 ft)	
		(MSL) *	(BGS)	TOP OF PROTECT	IVE CACINO
<u>.</u>		***************************************	400	TOF OF PROTECT	IVE CASING
		666.13	2.11_	TOP OF RISER PIF	E
TYPE OF SURFACE SEAL: Concrete	V E	664.02	0	GROUND SURFAC	E
		661.52	2,50	TOP OF ANNULAR	SEALANT
TYPE OF ANNULAR SEALANT: Bentonite grout					
INSTALLATION METHOD: Tremle pipe				074710144777	83. (ST.)
SETTING TIME: + 24 hours		655.86	8.16	STATIC WATER LE (AFTER COMPLETION	
TYPE OF BENTONITE SEAL-		•			
GRANULAR, PELLET, SLURRY, CHIPS	M				
(CIRCLE ONE)	\bowtie	607.02	57.00	TOP OF SEAL	
INSTALLATION METHOD: Poured		601.52	62.50	TOP OF SANDPAC	:K
SETTING TIME: ~ 15 minutes					
		595.48	68.54	TOP OF SCREEN	
TYPE OF SAND PACK: Quartz					
GRAIN SIZE: 40-60 U.S. Standard Series Sieve		590.78	73,24	BOTTOM OF SCR	EEN
INSTALLATION METHOD: Poured		590.48	73.54	BOTTOM OF WEL	L
TYPE OF BACKFILL MATERIAL: Not Applicable		585.02	79.00	BOTTOM OF BOR	EHOLE
(IF APPLICABLE)		* 0555551455			
INSTALLATION METHOD: Not Applicable		* REFERENCE	D TO A NATION	AL GEODETIC VERTICA	AL DATUM
WELL CONSTRUCTION			CASING ME	ASUREMENTS	
MATERIALS		DIAMETER OF BO	`	.)	6
(CIRCLE ONE)		ID OF RISER PIPE	- : -		2
		RISER PIPE LENG		rs (ft)	5 70.65
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER Steel		BOTTOM OF SCR		CAP (ft)	70.65 0.3
RISER PIPE ABOVE W.T. \$304, 85316, PTFE, PVC OR OTHER:		SCREEN LENGTH			4.7
RISER PIPE BELOW W.T. \$3304 SS316, PTFE, PVC OR OTHER:		TOTAL LENGTH	OF CASING (ft)	75.65
SCREEN \$\$304,8\$316, PTFE, PVC OR OTHER:		SCREEN SLOT S	IZE **		0,010"
	en e	** HAND-SLOTTED	WELL SCREEN	IS ARE UNACCEPTABLI	.

Illinois Environmental Protection A	Agency Well Completion Report	
SITE #: 0418080002 / ILD 005 078 126 C	OUNTY: Douglas WELL#: MW07S	
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois	BOREHOLE #: S	В07
STATE PLANE COORDINATE: X 975431.102 E Y 1142461.849 N (or) LATITUDE	: LONGITUDE:	WACHELUI DE CONTRACTO
		······
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGISTRATION #: 2442	
DRILLING CONTRACTOR: Boart-Longyear	DRILLER: D. Duscher	· · · · · · · · · · · · · · · · · · ·
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIST: K. Comire	
DRILLING METHOD: Rotosonic Drill	DRILLING FLUIDS (TYPE): Water	
LOGGED BY: K. Comire	DATE STARTED: 11/07/00 DATE FINISHED: 1	1/07/00
REPORT FORM COMPLETED BY: M. Leddy	DATE: 02/28/01	STATE OF THE PERSON NAMED IN COLUMN NAMED IN C
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft)	
	(MSL)* (BGS)	
	TOP OF PROTECTI	VE CASING
<u>, </u>	TOP OF PIOER PIO	_
		E .
TYPE OF SURFACE SEAL: Concrete	664.08 0 GROUND SURFACE	<u>.</u>
	662.08 2.00 TOP OF ANNULAR	SEALANT
TYPE OF ANNULAR SEALANT: Bentonite grout		
INSTALLATION METHOD: Tremle pipe		
SETTING TIME: + 24 hours	655.14 8.94 STATIC WATER LE	
	(AFTER COMPLETION)
TYPE OF BENTONITE SEAL-	VT.	
GRANULAR, PELLET, SLURRY, CHIPS (GIRCLE ONE)		
	645.08 19.00 TOP OF SEAL	
INSTALLATION METHOD: Poured	640.18 23.90 TOP OF SANDPAC	к
SETTING TIME: ~ 15 minutes		
	639.08 25.00 TOP OF SCREEN	
TYPE OF SAND PACK: Quartz		
GRAIN SIZE: 40-60 U.S. Standard Series Sieve	629.38 34.70 BOTTOM OF SCRE	EN
INSTALLATION METHOD: Poured	629.08 35.00 BOTTOM OF WELL	
Net A-viloakia	description of the second of t	- and a second
TYPE OF BACKFILL MATERIAL: Not Applicable (IF APPLICABLE)	629.08 35.00 BOTTOM OF BORE	HULE
INSTALLATION METHOD: Not Applicable	* REFERENCED TO A NATIONAL GEODETIC VERTICAL	AL DATUM
WELL CONSTRUCTION	CASING MEASUREMENTS	
MATERIALS	DIAMETER OF BOREHOLE (in.)	6
(CIRCLE ONE)	ID OF RISER PIPE (in)	2
·	PROTECTIVE CASING LENGTH (ft) RISER PIPE LENGTH (ft)	5
BROTECTINE CASING SCAR STEE BY OR STUED SHOULD	BOTTOM OF SCREEN TO END CAP (ft)	27.08
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER Steel RISER PIPE ABOVE W.T. SS304 SS316, PTFE, PVC OR OTHER:	SCREEN LENGTH (1st SLOT TO LAST SLOT) (ft)	9.7
RISER PIPE BELOW W.T. \$304 SS316, PTFE, PVC OR OTHER:	TOTAL LENGTH OF CASING (ft)	37.08
SCREEN SS304)SS316, PTFE, PVC OR OTHER:	SCREEN SLOT SIZE **	0.010"
The state of the s	** HAND-SLOTTED WELL SCREENS ARE UNACCEPTABL	

Illinois Environmental Protection	Agency V	Vell Completion Report
SITE #: 0418080002 / ILD 005078 126	COUNTY:	Douglas WELL #: MW08S
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois STATE PLANE		BOREHOLE #: SB08
COORDINATE: X <u>985161.733 E</u> Y <u>1144570.456 N</u> (or) LATITUDE		LONGITUDE:
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGISTI	RATION #: 2442
DRILLING CONTRACTOR: Boart-Longyear	DRILLER:	D. Duscher
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIST	T: K. Comire
DRILLING METHOD: Rotosonic Drill	DRILLING F	LUIDS (TYPE): Water
LOGGED BY: K. Comire	DATE STAR	TED: 11/19/00 DATE FINISHED: 11/19/00
REPORT FORM COMPLETED BY: M. Leddy	DATE:	05/02/01
ANNULAR SPACE DETAILS		ELEVATIONS DEPTHS (.01 ft)
•		(MSL) * (BGS)
		TOP OF PROTECTIVE CASING
·		683.83 0.40 TOP OF RISER PIPE
TYPE OF SURFACE SEAL: Concrete		684.23 0.00 GROUND SURFACE
	Y W	NA NA TOP OF ANNULAR SEALANT
TYPE OF ANNULAR SEALANT: Not applicable	H	
INSTALLATION METHOD: Not applicable		
SETTING TIME: Not applicable		677.50 6.33 STATIC WATER LEVEL
		(AFTER COMPLETION)
TYPE OF BENTONITE SEAL-	VT.	
GRANULAR, PELLET, SLURRY, CHIP		204.70
		681.73 2.50 TOP OF SEAL
INSTALLATION METHOD: Poured		680.73 3.40 TOP OF SANDPACK
SETTING TIME: - 15 minutes		
		680.68 3.55 TOP OF SCREEN
TYPE OF SAND PACK: Quartz		
GRAIN SIZE: 40-60 U.S. Standard Series Sieve		670.98 13.25 BOTTOM OF SCREEN
INSTALLATION METHOD: Poured		670.68 13.55 BOTTOM OF WELL
TYPE OF BACKFILL MATERIAL: Not Applicable		670.23 14.00 BOTTOM OF BOREHOLE
(IF APPLICABLE)		Maria de la compania del compania del compania de la compania del la compania de a compania del la compania de la compania de la compania dela compania del la compania de
INSTALLATION METHOD: Not Applicable		* REFERENCED TO A NATIONAL GEODETIC VERTICAL DATUM
WELL CONSTRUCTION		CACING MEAGUIDENENTS
WELL CONSTRUCTION MATERIALS		CASING MEASUREMENTS DIAMETER OF BOREHOLE (in.) 6
(CIRCLE ONE)		DIAMETER OF BOREHOLE (in.) 6 ID OF RISER PIPE (in) 2
,		PROTECTIVE CASING LENGTH (ff) 1
		RISER PIPE LENGTH (ft) 3.15
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER: Past Iro	on	BOTTOM OF SCREEN TO END CAP (ft) 0.3
RISER PIPE ABOVE W.T. S\$304 SS316, PTFE, PVC OR OTHER:		SCREEN LENGTH (1st SLOT TO LAST SLOT) (ft) 9.7
RISER PIPE BELOW W.T. \$\$304 SS316, PTFE, PVC OR OTHER:		TOTAL LENGTH OF CASING (ft) 13.15
SCREEN SS304 SS316, PTFE, PVC OR OTHER:		SCREEN SLOT SIZE ** 0.010"

Illinois Environmental Protection	ı Agency \	Nell Completion	າ Report	
NTE#: 0418080002 / ILD 005 078 126	COUNTY:	Douglas	WELL#: MW08D	
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois			BOREHOLE #:	SB08
STATE PLANE COORDINATE: X 985161.937 E Y 1144578.376 N LATITU	DE:		LONGITUDE:	
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGIST		2442	
DRILLING CONTRACTOR: Boart-Longyear	DRILLER:	D. Duscher		
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIS	T: K. Comire		
DRILLING METHOD: Rotosonic Drill	DRILLING I	FLUIDS (TYPE): Wate	er —	
LOGGED BY: K. Comire	DATE STAI	RTED: 11/18/00	DATE FINISHED:	11/19/00
REPORT FORM COMPLETED BY: M. Leddy	DATE:	05/02/01		
ANNULAR SPACE DETAILS		ELEVATIONS DEP	THS (.01 ft)	
		(MSL) * (80	SS)	
		200.0	TOP OF PROTECT	IVE CASING
		683.65 0,2	TOP OF RISER PII	PE
TYPE OF SURFACE SEAL: Concrete		683.91 0.0	00_ GROUND SURFAC	E
		680.91 3.6	00 TOP OF ANNULAR	R SEALANT
TYPE OF ANNULAR SEALANT: Bentonite grout				
INSTALLATION METHOD: Tremie pipe				
SETTING TIME: + 24 hours		656.42 27.	23 STATIC WATER L (AFTER COMPLETIO	
TYPE OF BENTONITE SEAL-				
GRANULAR, PELLET, SLURRY, CHIPS	M			
(CIRCLE ONE)		606.91 77	00 TOP OF SEAL	
INSTALLATION METHOD: Poured		601.41 82	.50 TOP OF SANDPA	CK
SETTING TIME: ~ 15 minutes				
		600.81 83	.10 TOP OF SCREEN	
TYPE OF SAND PACK: Quartz				÷
GRAIN SIZE: 40-60 U.S. Standard Series Sieve		598.61 85	.30 BOTTOM OF SCR	EEN
INSTALLATION METHOD: Poured		598.31 85	.60 BOTTOM OF WEL	L.
TYPE OF BACKFILL MATERIAL: Not Applicable (IF APPLICABLE)		582.91 101	BOTTOM OF BOR	REHOLE
INSTALLATION METHOD: Not Applicable		* REFERENCED TO	A NATIONAL GEODETIC VERTK	CAL DATUM
WELL CONSTRUCTION			SING MEASUREMENTS	•
MATERIALS		DIAMETER OF BOREH		6
(CIRCLE ONE)		ID OF RISER PIPE (in)		2
		PROTECTIVE CASING	LENGTH (ft)	1
		RISER PIPE LENGTH	(ft)	82.84
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER: east	Iron	BOTTOM OF SCREEN	TO END CAP (ft)	0.3
RISER PIPE ABOVE W.T. \$3304) SS316, PTFE, PVC OR OTHER:		SCREEN LENGTH (1st	SLOT TO LAST SLOT) (ft)	2.2
RISER PIPE BELOW W.T. \$304 SS316, PTFE, PVC OR OTHER:		TOTAL LENGTH OF C	ASING (fi)	85.34
SCREEN \$8304 SS316, PTFE, PVC OR OTHER:		SCREEN SLOT SIZE		0.010"
1		** HAND-SLOTTED WELL	SCREENS ARE UNACCEPTAB	LE

Illinois Environmental Protection A	gency Well Completion Report
SITE #: 0418080002 / ILD 005 078 126 Cd	DUNTY: Douglas WELL#: MW09S
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois	BOREHOLE #: SB09
STATE PLANE COORDINATE: X 981609.115 E Y 1138103.034 N (or) LATITUDE:	LONGITUDE;
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGISTRATION #: 2442
DRILLING CONTRACTOR: Boart-Longyear	DRILLER: D. Duscher
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIST: K. Comire
	DRILLING FLUIDS (TYPE): Water
LOGGED BY: K. Comire	DATE STARTED: 11/22/00 DATE FINISHED: 11/22/00
REPORT FORM COMPLETED BY: M. Leddy	DATE: 02/28/01
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft)
	(MSL) * (BGS)
	TOP OF PROTECTIVE CASING
T	696.04 -1.70 TOP OF RISER PIPE
	-1.70 TOF OF RISER PIPE
TYPE OF SURFACE SEAL: Concrete	694.34 0 GROUND SURFACE
	NA NA TOP OF ANNULAR SEALANT
TYPE OF ANNULAR SEALANT: Not applicable	
INSTALLATION METHOD: Not applicable	
SETTING TIME: Not applicable	691.21 4.83 STATIC WATER LEVEL (AFTER COMPLETION)
TYPE OF BENTONITE SEAL- GRANULAR, PELLET, SLURRY, CHIPS	YT .
(CIRCLE ONE)	691.34 3.00 TOP OF SEAL
INSTALLATION METHOD: Poured	690.34 4.00 TOP OF SANDPACK
SETTING TIME: ~15 minutes	
	689.10 5.24 TOP OF SCREEN
TYPE OF SAND PACK: Quartz	
GRAIN SIZE: 40-60 U.S. Standard Series Sleve	679.40 14.94 BOTTOM OF SCREEN
INSTALLATION METHOD: Poured	
TYPE OF BACKFILL MATERIAL: Not Applicable	677.34 17.00 BOTTOM OF BOREHOLE
(IF APPLICABLE)	
INSTALLATION METHOD: Not Applicable	* REFERENCED TO A NATIONAL GEODETIC VERTICAL DATUM
WELL CONSTRUCTION	CASING MEASUREMENTS
MATERIALS	DIAMETER OF BOREHOLE (in.) 6
(CIRCLE ONE)	ID OF RISER PIPE (in) 2
	PROTECTIVE CASING LENGTH (ft) 5
	RISER PIPE LENGTH (ft) 6.94
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER: Steet	BOTTOM OF SCREEN TO END CAP (ft) 0.3
RISER PIPE ABOVE W.T. \$\$304) \$\$316, PTFE, PVC OR OTHER:	SCREEN LENGTH (1st SLOT TO LAST SLOT) (ft) 9.7
RISER PIPE BELOW W.T. \$3304) \$3316, PTFE, PVC OR OTHER:	TOTAL LENGTH OF CASING (ft) 16.94
SCREEN SS304 SS316, PTFE, PVC OR OTHER:	SCREEN SLOT SIZE ** 0.010"
	** HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE

Illinois Environmental Protection A	gency Well Completion Report	
SITE #: 0418080002 / ILD 005 078 126 CC	OUNTY: Douglas WELL #: MW09D	
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois STATE	BOREHOLE #: SB09	
PLANE COORDINATE: X 981614.465 E Y 1138103.621 N (or) LATITUDE:	LONGITUDE:	
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGISTRATION #: 2442	
DRILLING CONTRACTOR: Boart-Longyear	DRILLER: D. Duscher	
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIST: K. Comire	
DRILLING METHOD: Rotosonic Drill	DRILLING FLUIDS (TYPE): Water	
LOGGED BY: K. Comire	DATE STARTED: 11/20/00 DATE FINISHED: 11/21/	/00
REPORT FORM COMPLETED BY: M. Leddy	DATE: 02/28/01	
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft)	
	(MSL) * (BGS)	
	TOP OF PROTECTIVE C	:ASING
TYPE OF SURFACE SEAL: Concrete	694.39 0 GROUND SURFACE	
	691.39 3.00 TOP OF ANNULAR SEA	LANT
TYPE OF ANNULAR SEALANT: Bentonite grout		
INSTALLATION METHOD: Tremle pipe		
SETTING TIME: + 24 hours	658.16 37.98 STATIC WATER LEVEL (AFTER COMPLETION)	
TYPE OF BENTONITE SEAL-		
GRANULAR, PELLET, SLURRY, CHIPS	Y	
(CIRCLE ONE)	606.39 88.00 TOP OF SEAL	
INSTALLATION METHOD: Poured		
SETTING TIME: ~ 15 minutes		
TYPE OF SAND PACK: Quartz GRAIN SIZE: 40-60 U.S. Standard Series Sieve	595.47 98.92 BOTTOM OF SCREEN	
INSTALLATION METHOD: Poured	595.17 99.22 BOTTOM OF SCREEN	
Lieb Marie M		
TYPE OF BACKFILL MATERIAL: Not Applicable (IF APPLICABLE)		_E
INSTALLATION METHOD: Not Applicable	* REFERENCED TO A NATIONAL GEODETIC VERTICAL DA	ATUM
WELL CONSTRUCTION	CASING MEASUREMENTS	
MATERIALS	DIAMETER OF BOREHOLE (in.)	6
(CIRGLE ONE)	ID OF RISER PIPE (in)	2
	PROTECTIVE CASING LENGTH (ft)	5
	RISER PIPE LENGTH (ft) 9	8.47
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER: Steel	BOTTOM OF SCREEN TO END CAP (ft)	0.3
RISER PIPE ABOVE W.T. \$3304_6S316, PTFE, PVC OR OTHER:	SCREEN LENGTH (1st SLOT TO LAST SLOT) (ft)	2.2
RISER PIPE BELOW W.T. \$300 SS316, PTFE, PVC OR OTHER:		00.97
SCREEN SS304 SS316, PTFE, PVC OR OTHER:	SCREEN SLOT SIZE ** 0.	.010"

Illinois Environmental Protection A	Agency well Completion Report	
SITE #: 0418080002 / ILD 005 078 126 C	OUNTY: Douglas WELL #: MW10	
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois	BOREHOLE #: SB10	
STATE PLANE		
COORDINATE: X <u>977306.6 E</u> Y <u>1140795.337 N</u> (or) LATITUDE	: LONGITUDE;	
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGISTRATION #: 2442	
DRILLING CONTRACTOR: Boart-Longyear	DRILLER: D. Duscher	
CONSULTING FIRM: Clayton Group Services, inc.	GEOLOGIST: M. Leddy	
DRILLING METHOD: Rotosonic Drill	DRILLING FLUIDS (TYPE): None	······································
LOGGED BY: M. Leddy	DATE STARTED: 07/10/01 DATE FINISHED: 07/10/01	<u> </u>
REPORT FORM COMPLETED BY: M. Leddy	DATE: 09/20/2001	
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft)	
	(MSL) * (BGS)	
	TOP OF PROTECTIVE CAS	SING
	674.84 -2.54 TOP OF RISER PIPE	
TYPE OF SURFACE SEAL: Concrete	672.30 0 GROUND SURFACE	
	NA NA TOP OF ANNULAR SEALA	NT
TYPE OF ANNULAR SEALANT: Not Applicable		
INSTALLATION METHOD: Not Applicable		
SETTING TIME: Not Applicable	666.18 6.12 STATIC WATER LEVEL (AFTER COMPLETION)	
l	() () () () () () () () () ()	
TYPE OF BENTONITE SEAL-	∀ T	
GRANULAR, PELLET, SLURRY, CHIPS (CIRCLE ONE)	670.30 2.00 TOP OF SEAL	
INSTALLATION METHOD: Poured	668.80 3.50 TOP OF SANDPACK	
SETTING TIME: ~ 15 minutes		
	667.30 5.00 TOP OF SCREEN	
TYPE OF SAND PACK: Quartz		
GRAIN SIZE: 40-60 U.S. Standard Series Sieve	657.60 14.70 BOTTOM OF SCREEN	·
INSTALLATION METHOD: Poured	657.30 15.00 BOTTOM OF WELL	
TYPE OF BACKFILL MATERIAL: Not Applicable	657.30 15.00 BOTTOM OF BOREHOLE	
(IF APPLICABLE)	A PARSON MARKATON AND A STATE OF THE STATE O	
INSTALLATION METHOD: Not Applicable	* REFERENCED TO A NATIONAL GEODETIC VERTICAL DATU	M
WELL CONSTRUCTION	CASING MEASUREMENTS	
MATERIALS	DIAMETER OF BOREHOLE (in.) 6	
(CIRCLE ONE)	ID OF RISER PIPE (in) 2	
	PROTECTIVE CASING LENGTH (ft) 5	
	RISER PIPE LENGTH (ft) 7.5	4
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER Steel	BOTTOM OF SCREEN TO END CAP (ft) 0.3	3
RISER PIPE ABOVE W.T. \$5304,85316, PTFE, PVC OR OTHER:	SCREEN LENGTH (1st SLOT TO LAST SLOT) (ft) 9,7	7
RISER PIPE BELOW W.T. \$5304_6S316, PTFE, PVC OR OTHER:	TOTAL LENGTH OF CASING (ft) 17.	
SCREEN SS3042SS316, PTFE, PVC OR OTHER:	SCREEN SLOT SIZE ** 0.01 ** HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE	0"

Illinois Environmental Protection	Agency Well Completion Report
ITE #: 0418080002 / ILD 005 078 126	COUNTY: Douglas WELL #: MW11
SITE NAME: Millennium (Equistar Chemicals)/Tuscola, Illinois	BOREHOLE #: SB11
STATE PLANE COORDINATE: X 982520.0 E Y 1143360.942 N (or) LATITUDE	E: LONGITUDE:
SURVEYED BY: Illini Engineering Associates/Robert L. Cox	ILL REGISTRATION #: 2442
DRILLING CONTRACTOR: Boart-Longyear	DRILLER: D. Duscher
CONSULTING FIRM: Clayton Group Services, Inc.	GEOLOGIST: M. Leddy
DRILLING METHOD: Rotosonic Drill	DRILLING FLUIDS (TYPE): Water
LOGGED BY: M. Leddy	DATE STARTED: 07/10/01 DATE FINISHED: 07/11/01
REPORT FORM COMPLETED BY: M. Leddy	DATE: 09/20/01
ANNULAR SPACE DETAILS	ELEVATIONS DEPTHS (.01 ft)
ANNOLAR SPACE DETAILS	(MSL) * (BGS)
	TOP OF PROTECTIVE CASING
	698.28 -2.70 TOP OF RISER PIPE
TYPE OF SURFACE SEAL: Concrete	695.58 0 GROUND SURFACE
	692.08 3.50 TOP OF ANNULAR SEALANT
TYPE OF ANNULAR SEALANT: Bentonite grout	
INSTALLATION METHOD: Tremle pipe	
SETTING TIME: + 24 hours	658.74 36.80 STATIC WATER LEVEL (AFTER COMPLETION)
TYPE OF BENTONITE SEAL-	
GRANULAR, PELLET, SLURRY, CHIPS	
(CIRCLE ONE)	603.58 92.00 TOP OF SEAL
INSTALLATION METHOD: Poured	598.08 97.50 TOP OF SANDPACK
SETTING TIME: ~ 15 minutes	<u> </u>
	596.78 98.80 TOP OF SCREEN
1 1 	
TYPE OF SAND PACK: Quartz GRAIN SIZE: 40-60 U.S. Standard Series Sieve	594.18 101.40 BOTTOM OF SCREEN
INSTALLATION METHOD: Poured	593.58 102.00 BOTTOM OF WELL
TYPE OF BACKFILL MATERIAL: Not Applicable (IF APPLICABLE)	
INSTALLATION METHOD: Not Applicable	* REFERENCED TO A NATIONAL GEODETIC VERTICAL DATUM
W	
WELL CONSTRUCTION MATERIALS	CASING MEASUREMENTS
(CIRCLE ONE)	DIAMETER OF BOREHOLE (In.) 6 ID OF RISER PIPE (In) 2
(onote one)	PROTECTIVE CASING LENGTH (ft) 5
	RISER PIPE LENGTH (ft) 101.7
PROTECTIVE CASING SS304, SS316, PTFE, PVC OR OTHER: Steel	BOTTOM OF SCREEN TO END CAP (ft) 0.3
RISER PIPE ABOVE W.T. \$\$304 \$8316, PTFE, PVC OR OTHER:	SCREEN LENGTH (1st SLOT TO LAST SLOT) (ft) 2.7
RISER PIPE BELOW W.T. \$\$304, SS316, PTFE, PVC OR OTHER:	TOTAL LENGTH OF CASING (ft) 104.7
SCREEN \$304 SS316, PTFE, PVC OR OTHER:	SCREEN SLOT SIZE ** 0.010"



APPENDIX C-3

WELL CONSTRUCTION REPORTS

Final Environmental Indicators Report Millennium Petrochemicals / Tuscola, Illinois coverpgs_jmf_doc \ 10/31/01 \ MMN\BRS

License Number

PE OR PRESS FIRMLY WITH BLACK INK PEN

MPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

	·	GEOLOGICAL & WATER SURVEY WELL RECORD
1. Type of Well: a. Driven Well: Casing diam	in. Depth ft.	13. Property Owner Well # \(\int \int \partial \chi \chi \chi \chi \chi \chi \chi \chi
b. Bored Well: Buried Slab [] Yes []		14 Driller D Duschier License #1
Hole Diameter in to ft:	in. toft.;in. toft.	Name of Drilling Company books & Lilliante Company books 16.
c. Drilled Well: PVC casing Formation page		Permit No. Date Issued
Hole Diameterin. toft.;		17 Date Dalling Charted III fold (10)
· · · · · · · · · · · · · · · · · · ·		18. Well SITE address 1005 Frast 115 thay 36 Tust of a 112 61953
Type of Grout # of Bags Grout Weight	From (ft.) To (ft.) Tremie Depth (ft.)	Township Name Largett: Land ID # 20.
		Subdivision Name Lot # 21
<u> </u>		Location: a County Day 4/05
		b. Township /6/N Range 75 Section 36
1 D 22 1 1 1 C4 - 2 C M - 1	II. Driven D.A.Ven E. 3 No.	c. NF Quarter M/// Quarter PF Quarter
d. Drilled Well: Steel Casing Mechanica	in to the first of	d. coordinates: Site Elevation ft.(msl)
Hole Diameterin. to <u>54. C</u> ft.;	m. ton.,m. ton.	22. Casings, Liners*, & Screen Information
Type of Grout # of Bags Grout Weight	From (ft.) To (ft.) Tremie Depth (ft.)	Diam. (in.) Material Joint Slot Size From (ft.) To (ft.)
		5 5 5 5 1 2 1 3 2 1 1 3 1 5 2 7
Frankonise/Cement 4	2,8 4.4 40	
		Only
e. Well finished within: Unconsolidated	Materials [] Bedrock	(*)
f. Kind of Gravel Sand Pack Grain Size/Su	applier # From (ft.) To (ft.)	(List reason for liner, type of upper and lower seals installed)
	Villing 410 4 4-7	23. Water fromat a depth offt. toft. a. static water level_4.17 ft. below casing which isain. above ground
Quartz #616lobal]	Nilling 46.4 47	a. static water level 54.17 ft. below casing which is 22 in. above ground
Quartz #1866JD	11111ina 47 54	b. pumping level isft. pumpinggpm after pumping forhours
11.40	· · · · · · · · · · · · · · · · · · ·	
2. Well Use: [] Domestic [] Irrigation	[] Commercial [] Livestock	24. Earth Materials Passed Through From (ft.) To (ft.)
Monitoring [] Other		Silty Clay 0 45.0
3. Date Well Completed: 11/4/00	Well Disinfected [] Yes [X] No	
Driller's estimated well yield A/A	gpm	Player Silt 45.0 46.1
4. Date Permanent Pump Installed NA	<u> </u>	Sil# 46.1 50.5
5. Pump Capacity AA gpm Se	t at (depth)ft.	
6. Pitless Adapter Model and Manufacturer:	<u>NA</u>	80 rd 50,5 53.5
7. Well Cap Type and Manufacturer NF		Sil+ 53.5 54.0
8. Pressure Tank: Working Cycle NA ga	Is. Captive Air: [] Yes [] No	3117 93.9 34.12
9. Pump System Disinfected: [] Yes [] No		
10. Name of Pump Company NA		·
/ 6		
11. Pump Installer: MA	License #	
	the contract of the contract o	
	License #	
Licensed Pump Contractor Signature		
Illinois Department of Public Health		
Division of Environmental Health		_
525 W. Jefferson Street		
Springfield, IL 62761		
	DO Not write on these lines	(If DRY HOLE, fill out log & indicate how hole was sealed)

25. Licensed Water Well Contractor Signature

IMPORTANT NOTICE: This State Agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Public Act 85-0863. DISCLOSURE OF THIS INFORMATION IS MANDATORY. This form has been approved by the Forms Management Center.

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PE OR PRESS FIRMLY WITH BLACK INK PEN OMPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

1. Type of Well: a. D	riven We	l: Casing diam	ıi	n. Depth	ft.	
b. Bored Well: But Hole Diameter	ried Slab in. to	[]Yes [] oft.:	No in. to	ft.;	in. to	ft
c Drilled Well- PV	IC casino	Formation page	cker set at	depth of	ft.	
					in. to	
Type of Grout	# of Bags	Grout Weight	From (ft.) To (ft.)	Tremie Depth	(ft.) 1
					· ····································	
d. Drilled Well: Ste Hole Diameter	el Casing in. t	Mechanica 0 <u>-20, 0</u> ft.; _	ally Driver in. to	1 [X] Yes ft.;	[] No in. to	ft.
Type of Grout	# of Bag	Grout Weight	From (ft) To (ft.)	Tremie Depth ((ft)
NA				*.	and a second	_
l control of the cont			.			
e. Well finished wit	hin: [X]	Unconsolidated	Materials	[] Bed	rock	saali .
f. Kind of Gravel Sar	nd Pack	Grain Size/S	upplier#	From (f	t.) To (ft.)	•
Quartz		HR Clobal				
Quartzi		47/Clobal	Drilling	9.4	20	
2. Well Use: [] Domestic [] Irrigation [] Commercial [] Livestock [Monitoring [] Other 3. Date Well Completed: (1) 3 CD Well Disinfected [] Yes [M] No						
3. Date Well Comple	ted: []	3 Oc		infected [Yes [X] No	
Driller's estimate	ump Inctal	led A/A	gpm		-	
4. Date Permanent Pump Installed NA 5. Pump Capacity NA gpm Set at (depth) NA ft.						
6. Pitless Adapter Mo	odel and M	lanufacturer:	<u>NN.</u>			
7. Well Cap Type and 8. Pressure Tank: Wo	d Manufac	turer A	de Car	tive Air: [lVes []No	
9. Pump System Disi	nfected: [Yes [] No	ais. Ca p S	uve An. [1168 []146	
10. Name of Pump Co						
11. Pump Installer:	<u> </u>		<u></u> L	icense#_		
12.			I.	icense#_		
Licensed Pur	np Contrac	ctor Signature				
Illinois Department of	Public He	ealth				
Division of Environm	ental Heal					
525 W. Jefferson Street	et					
Springfield, IL 62761			DO Not	write on the	ese lines	

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	GEOLO	GICAL &	WATER S	SURVEY W	/ELL RECO	RD C	1 -
3. Property Ow					,	Well# ! [] [
4. Driller	DUS	chec			License #		
13. Property Ow 14. Driller Name of Drillin Permit No	g Company	Boart	A JAMES J	car C	CMOANY		1
Permit No.	, , , ,		J/	Date	Issued /	· · · · · · · · · · · · · · · · · · ·	
Permit No	g Started #	1/3/00			-	7	
8. Well SITE	iddress //2	7 20	st 115	Hull 2	lo, Miscu	7/0, 11-10	95
Township Name	Garre	II.		/Lan	d fD#		2
Subdivision Nat	ne			Lot	#		
Location: a. Cou	inty Dolla	1/45					7
b. Township	16N Y	Range 1	<u>e</u> S	ection	60		1_
b. Township)uarter < [Quarter	NE (Quarter			
d. coordinate	s:		Site Elev	vation	ft.(msl)		+
c. <u>VF</u> d. coordinate 2. Casings, Lir	ers*, & Scre	en Inform	ation	:	· · · · _ · ·	1	1
Diam. (in.)	Material	JUIII	3101 3121	110111 (1)	10 (10)		
A S	t. Steelt	browled	. 0.010"	10	19.7	For Si	ITVE
							Only
			20000				
<u> </u>		·			<u></u>		
*)	son for liner,						
					From (ft.)	hours	
24. Earth Mate	nais rassed	Through	., Warner 1992		1 4	10(11)	1
Silt	-y Cla	t.V	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		10	de	1
	F	7			1		
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/m				60027			1
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A.		71-20-20-00		- 1/		<u> </u>	1

			1			**ADDC	-
	·	W. W				- 	1
	•		* *		E	1	

25. Licensed Water Well Contractor Signature

(If DRY HOLE, fill out log & indicate how hole was sealed)

<u>'PE OR PRESS FIRMLY WITH BLACK INK PEN</u> MPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

1. Type of Well: a. D				in. Depth	nft.	
b. Bored Well: Bu	ried Stab in. to	[]Yes [] D fl.:	in. to	ft.:	in. to	ft.
c. Drilled Well: PY	C casing	Formation pa	cker set at	depth of	ft.	
Hole Diameter	in. to	oft.; _	in. to_	ft.;	in. to	ft.
Type of Grout	# of Bags	Grout Weight	From (ft.) To (ft.)	Tremie Depth	(ft.)
d. Drilled Well: Ste Hole Diameter	el Casing	Mechanic	ally Drive	n [X Yes	[] No	
· ·						
Type of Grout	# of Bags	Grout Weight	From (ft	.) To (ft.)	Tremie Depth (ft.) 1
MA						_
			,	-		
e. Well finished wit	hin: 🔀 🛚	Jnconsolidated	Materials	[] Bed	rock	
f. Kind of Gravel Sar	d Pack	Grain Size/S	upplier#	From (fi	t.) To (ft.)	
Quartz	-	#8 Clobal D	dllina			
Quartz					/5	
2. Well Use: [] Don [nitoring ted: <u>{ </u> d well yiel mp Install \VA odel and M	Other Ite OO AV A gpm See anufacturer:	Well Dis gpm et at (depth	infected [] Yes 🔀 No	
8. Pressure Tank: Wo	rking Cyc	le <u>g</u>	als. Cap	tive Air: []Yes []No	
9. Pump System Disir)	•		
10. Name of Pump Con	трапу	JYFT				
11. Pump Installer:	MA		L	icense#_		
12 Eicensed Purr	p Contrac	tor Signature	L	icense#_		
Illinois Department of Division of Environme 525 W. Jefferson Stree Springfield, IL 62761	ntal Healt		DO Not	write on the	se lines	

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Date	15	<u>)/</u>
------	----	-----------

GEOLOGICAL & WATER SURVEY WELL	I RECORD
13. Property Owner 14. Driller D. Duscher Line Name of Drilling Company Boart Long Vear Connection Date Issue 17. Date Drilling Started Whiles	Well# <u>かいかるら</u>
14. Driller D. Duscher Lie	cense #1
Name of Drilling Company Boart Longyear Conge	16.
Permit No. 17. Date Drilling Started 18. Well SITE address 1975 Cast 115 Hay 36, Tusage Township Name Land ID # Subdivision Name Location: a. County Douglas	d <u>'</u>
17. Date Drilling Started (1416)	/ ///
18. Well SITE address 106 East US Hay Sh, TUSIO	1 20 20 20
Township Name Land 1D #	20.
Subdivision Name Lot#	21,
1 TO 1 to 12 of Discourse the Continue 2 to	[*** *** **
c. St.) Ouarter St.) Ouarter NF Quarter	
d. coordinates: Site Elevation	ft.(msl)
c. SL) Quarter Star Quarter AF Quarter d. coordinates: Site Elevation 22. Casings, Liners*, & Screen Information	
Diam. (in.) Material Joint Slot Size From (it.)	10 (n.)
9 St. Steel Thrested D. 010" 5.0 14	For Survey Use
	Only
(*)	
(*)(List reason for liner, type of upper and lower seals installed) 23. Water from(1+v_(1)ay at a depth of ft a. static water level (6.39 ft below casing which is in.	to <u>//- 7</u> ft. above ground
b. pumping level is ft. pumpinggpm after pump	ing forhours
24. Earth Materials Passed Through From	ı (ft.) To (ft.)
Silty Clay	0 15.0

	AA22432431
The state of the s	
HAMATAN HAMATA	
·	
- Management of the state of th	

(ICDDY HOVE CIL	
(If DRY HOLE, fill out log & indicate how hole was sealed)	
•	
25. Licensed Water Well Contractor Signature License	Number

PE OR PRESS FIRMLY WITH BLACK INK PEN MPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT	GEOLOGICAL & WATER SURVEY WELL RI	ECORD
1. Type of Well: a. Driven Well: Casing diamin. Depthft.	13. Property Owner 14. Driller D. Duscher Licer	Well# <u>அம</u>
b. Bored Well: Buried Slab [] Yes [] No	14. Driller D. Duscher Licer	nse #
Hole Diameter in. to ft.; in. to ft.; in. to ft.; in. to ft.	14. Driller D. Du Scheet Longyear Con Name of Drilling Company Propert Longyear Con Permit No. 17. Date Drilling Started 11/18/00 18. Date Issued	nparely.
c. Drilled Well: PVC casing Formation packer set at depth offt.	Permit No. Date issued	
Hole Diameterin. toft.;in. toft.;in. toft.	18. Well SITE address 125 East US Hwy 36, Jusan	1. T. 1.195
Type of Grout # of Bags Grout Weight From (ft.) To (ft.) Tremie Depth (ft.)	Township Name Agreett Land ID#	(
	Subdivision Name Lot #	
	Location: a County Diou a 175	
	b. Township 1/ Al Range 7 F Section 36	
d. Drilled Well: Steel Casing Mechanically Driven [X] Yes [] No	c A/F Quarter S/F Quarter A/M/ Quarter	فأحداد فحرا
Hole Diameter 6 in. to 15.0 ft.; in. to ft.; in. to ft.	d. coordinates: Site Elevation ft.((msl)
	22. Casings, Liners*, & Screen Information	(ft)
Type of Grout # of Bags Grout Weight From (ft.) To (ft.) Tremie Depth (ft.)	Diam. (in.) Material Joint Slot Size From (ft.) To	(11.)
NA L	2 St Steel throated 0.010" 5 14;	For Su
e. Well finished within: [] Unconsolidated Materials [] Bedrock	(*)	wom
f. Kind of Gravel Sand Pack Grain Size/Supplier # From (ft.) To (ft.)	(I ist reason for liner time of unner and lower seals installed)	111-7 0
Quartz # Glazil Drilling	23. Water from Sity Clay at a depth of 5 ft. to	o <u>//</u> . II.
The state of the s	a. static water level (3.70) ft. below casing which isin. ab b. pumping level is ft. pumping gpm after pumpin	ove ground of for hours
Quartz Flabol Drilling 5 15	b. pumping level isit. pumpinggpin after pumpin	5 1011100.0
2. Well Use: [] Domestic [] Irrigation [] Commercial [] Livestock	24. Earth Materials Passed Through From (ft.) To (ft.)
Monitoring [] Other	Silty Clay 0	15.0
Monitoring [Other	21117 21229	
Driller's estimated well yield NA gpm		
4. Date Permanent Pump Installed 5. Pump Capacity M gpm Set at (depth) M ft.		
5. Pump Capacity A/71 gpm Set at (depth) 70 P4 It. 6. Pitless Adapter Model and Manufacturer: A/A		
7. Well Con Type and Manufacturer A/F		
7. Well Cap Type and Manufacturer 8. Pressure Tank: Working Cycle Not gals. Captive Air: [] Yes [] No		
9. Pump System Disinfected: [] Yes [] No		
10. Name of Pump Company A/A	and the same of th	
	an data data da data da data da	
11. Pump Installer: License #		m.
Tionno #		.]
12. License # License #	- Marine Company Compa	
Election I mile Contractor dignature	All the state of t	
Illinois Department of Public Health		
Division of Environmental Health		
525 W. Jefferson Street		
Springfield, IL 62761	(ICEDIAL HOLE CIL 1 - 0 / 1 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
DO Not write on these lines	(If DRY HOLE, fill out log & indicate how hole was sealed)	

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25. Licensed Water Well Contractor Signature

License Number

Well# MW045

For Survey Use Only

'PE OR PRESS FIRMLY WITH BLACK INK PEN MPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

1. Type of Well: a. D	riven Wel	l: Casing dian	1i	in. Deptl	hft.	
b. Bored Well: Bu	ried Slab	[]Yes []	No			0
Hole Diameter	in. to)ft.; _	in. to_	n.,	in. to	n.
c. Drilled Well: PV	C casing	Formation pa	cker set at	depth of	IL.	A
					;in. to	
Type of Grout	# of Bags	Grout Weight	From (ft.) To (ft.)	Tremie Depth (1	ft.)
d. Drilled Well: Ste						
Hole Diameter	<u> 6</u> in. to	o <u> </u>	in. to_	ft.	;in. to	_ft.
Type of Grout	# of Bags	Grout Weight	From (ft) To (ft.)	Tremie Depth (1	ft.)
NA						ļ
e. Well finished wit	hin: [X] [Jnconsolidated	Materials	[] Bec	lrock	4
f. Kind of Gravel San	d Pack	Grain Size/S	upplier#	From (f	t.) To (ft.)	
Quartz	13/8	Chlyl D	tilling	13.5	14	
Quartz	#7	Clobal D	cilling	14	25	
2. Well Use: [] Don [x] Mo 3. Date Well Complet Driller's estimated 4. Date Permanent Pu 5. Pump Capacity 6. Pitless Adapter Mc 7. Well Cap Type and 8. Pressure Tank: Wo 9. Pump System Disin 10. Name of Pump Con 11. Pump Installer:	nitoring ted: 11 d well yiel imp Install MA odel and M d Manufac orking Cyc nfected: [mpany	Other OT	Well Disgram gpm et at (depti	infected	[]Yes [☑] No A ft.]Yes []No	
12.			L	icense #		
Licensed Purr	p Contrac	tor Signature		_		
Illinois Department of Division of Environme 525 W. Jefferson Stree Springfield, IL 62761	ental Healt t		<u></u>			
-r, v-/v.			DO Not	write on the	ese lines	
IMPORTANT NOTICE:	This State A	gency is requesting	disclosure o	f information	that is necessary to ac	complish t

IMPORTANT NOTICE: This State Agency is requesting disclosure of information that is necessar			
statutory purpose as outlined under Public Act 85-0863. DISCLOSURE OF THIS INFORMATION IS M	IANDAT	ORY	. Th
form has been approved by the Forms Management Center.			
TT 406 0107 10/00			

IL 482-0126 rev. 12/98

D.4-	1/12	1
Date	1 1 1 5 X	

GEOLOGICAL & WATER SURVEY V	vell record Well # 何か <u>の</u> ら
13. Property Owner	Well# MUNICO
14. Driller D. Duscher	License # 15.
Name of Drilling Company 2001 Tonyer	Issued
	1
17. Date Drilling Started 11/17/00	- Tuspeda 11 6/95319
17. Date Drilling Started 11 11 1 (7) 18. Well SITE address 125 East 15 Havy 3 Township Name 125 Feb.	id ID# 20.
Subdivision Name Lot	# 21.
Location: a County Day 4 1 5	
تر ب المستور	36
c. MA Quarter SIN Quarter MIN Quarter	
d. coordinates: Site Elevation	ft.(msl)
b. Township 161/ Range / Section	
Diam. (in.) Material Joint Slot Size Profit (1	<u>-) 10 (11.)</u>
2 St. Stell Threaded 0.015" 15.0	24,7 For Survey Use
	Only
	<u> </u>
	<u></u>
(List reason for liner, type of upper and lower seals installe	A)
23. Water from Silta Clay at a depth of 15	ft to 24/ 7 ft.
a. static water level 10.40ft. below casing which is	in, above ground
b. pumping level is ft. pumpinggpm after	pumping for hours
24. Earth Materials Passed Through	From (ft.) To (ft.)
	Tiom (II.) To (II.)
Silty May	
Silty Clay	0 25-0
Silty Clay	
Silty Clay	0 25.0
Silty Clay	0 25.0
(If DRY HOLE, fill out log & indicate how hole was sealed	0 25.0

THE OR PRESS FIRMLY WITH BLACK INK PEN

MPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

	GI
1. Type of Well: a. Driven Well: Casing diamin. Depthft.	13. Property Owner
b. Bored Well: Buried Slab [] Yes [] No	14. Driller D. Du
Hole Diameterin. toft.;in. toft.;in. toft.	Name of Drilling Comp
c. Drilled Well: PVC casing Formation packer set at depth offt. Hole Diameter in. to ft.; in. to ft.; in. toft.	Permit No
	18. Well SITE address
Type of Grout # of Bags Grout Weight From (ft.) To (ft.) Tremie Depth (ft.)	Township Name Ga
	Subdivision Name
	Location: a. County 📗
	b. Township 1101
d. Drilled Well: Steel Casing Mechanically Driven X Yes [] No	c. <u>NE</u> Quarter
Hole Diameter 6 in. to 40.0ft.; in. to ft.; in. to ft.	d. coordinates:
Type of Grout # of Bags Grout Weight From (ft.) To (ft.) Tremie Depth (ft.)	Diam. (in.) Materia
Bentonite/Count 4 3.2 23.5 22	2 st. Ste
DEMONOCACINET 1 3.1 4.3	
e. Well finished within: [x] Unconsolidated Materials [] Bedrock	(#)
f. Kind of Gravel Sand Pack Grain Size/Supplier # From (ft.) To (ft.)	(*)(List reason for
4011130110	23. Water from Silty
Quart 7 HGlotal Drillin 28.5 29	 a. static water levél
Quartz McGlobal Drilling 29 40	b. pumping level is
2. Well Use: [] Domestic [] Irrigation [] Commercial [] Livestock	24 Earth Matarials Bo
[\(\frac{1}{2}\)] Monitoring [\(\frac{1}{2}\)] Other	24. Earth Materials Pa
3. Date Well Completed: Well Disinfected [] Yes No	<u> Silty C</u>
Driller's estimated well yield <u>NIA</u> gpm	1 511+
4. Date Permanent Pump Installed NA	SILLIA
5. Pump Capacity NA gpm Set at (depth) NA ft.	
6. Pitless Adapter Model and Manufacturer: NA	Clayeu
7. Well Cap Type and Manufacturer 8. Pressure Tank: Working Cycle NA gals. Captive Air: [] Yes [] No	1 514 '
9. Pump System Disinfected: [] Yes [] No	
10. Name of Pump Company NA	
	- W.
11. Pump Installer: License #	
12. License # License #	
Didning I guil ooungan ordinana	
Illinois Department of Public Health	
Division of Environmental Health	
525 W. Jefferson Street	
Springfield, IL 62761 DO Not write on these lines	(If DRY HOLE, fill o
DO 110t with oil stress times	(iii raya iii o

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	·				/		
	GEO	LOGICAL &	WATER S	SURVEY V	VELL RECO	RD ·	
13. Property C						Well# <u>Mt</u>	1065
14. Driller	D. Dusi	cher			License #	4	15.
Name of Drill	ing Compan	v Boar	1- Lone	IVEAC.	Compar	rd .	16.
Permit No			*	ノ/ Date	Issued	J	
17 Date Drill	ing Started	Willeler					
18. Well SIT	E address /	25 800	+ 115	Huys 30	, Tuscola	16 6190	_ر <u>ت </u>
Township Na	me Gar	rett		Lan	id ID#		20.
Subdivision N	lame			Lot	:#		21.
Location: a. C	County Dry	ualas			m f		Tili
b. Townsh	ip <u> </u>	Range	7 <i>F</i> S	ection	<u> </u>		
c. <u>NE</u>	_ Quarter <u>S</u>	W Quarter	NW (Quarter (a (1)		
d. coordina 22. Casings, I	ates:		Site Elev	ation	ft.(msl)		1
22. Casings, I	_iners*, & So	creen Inform	ation	F (0	m- (A.)		
Diam. (in.)	Material	Joint	Slot Size	7	t.) To (ft.)		
2	st.Steel	Throadel	0.010"	30_		For S	urvey Use
		-			<u> </u>		Only
· · · · · · · · · · · · · · · · · · ·			7				•
(.)			9117 (Carlemany)	X	2 - LIMANUS CONT		
(*)	reason for line	er, type of upp	er and lower	seals installe	·d)		
23. Water from	m Silks at	ate < 11-	at a den	th of 30	ft. to 🗷	7.7 ft.	
a static w	ater level	√ 2 ft belo	w casing w	hich is 2	4- in. above g	ground	
h numnin	o level is	fl. pun	noing	gom after	pumping for	hours	\$
o. pumpin	.g 10701.1d	xa pan	·P····8				
24. Earth Ma	terials Passe	d Through			From (ft.)	To (ft.)	
5114	-1/ (1 to	aV	-			13.2	
The state of /td <td>-</td> <td>7</td> <td></td> <td>. ACAMEDITY</td> <td>13.2</td> <td>1</td> <td></td>	-	7		. ACAMEDITY	13.2	1	
< 11	-1. (1)	<i>5</i> 3 <i>6</i>	· 40WA	14000 · · · · · · · · · · · · · · · · · ·	16.6		
	<u> </u>	<u>a y</u>	*	VIII	70 14		
('la	yeu =	311t	***************************************		35:7	35.5	
≤ 111	<u> </u>				35.5	40.0	
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	***************************************	······································		10.1901.0103371			
			,	***************************************			
							į
(If DRY HO	LE, fill out	log & indica	te how hole	was sealed	1)		

25. Licensed Water Well Contractor Signature

W	 Cons	• •	tion	. .	port

PE OR PRESS FIRMLY WITH BLACK INK PEN .MPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

1. Type of Well: a. D b. Bored Well: Bu	riven We	II: Casing dian	1i No	in. Depth	nft	
				ft.;	in. to	_ft.
c. Drilled Well: PV	C casing	Formation pa	cker set at	depth of	ft.	
Hole Diameter	in. t	oft.;	in. to_	ft.;	in. to	ft.
Type of Grout	# of Bags	Grout Weight	From (ft.) To (ft.)	Tremie Depth (ft.)
٠.						
]
	in. t	o <u>35.0</u> ft.;_	in. to_	ft.;	in. to	
Type of Grout	# of Bag	s Grout Weight	From (ft) To (ft.)	Tremie Depth (ft.)
Bentonite Comer	+2	- 14. 14.	2	19	18	
e y light state.		n in personal and	r gors	t by it th		
e. Well finished wit						•
f. Kind of Gravel Sar	nd Pack	Grain Size/S	upplier#	From (f	t.) To (ft.)	
Quartz		#8 Global	Drilling	23.9	24.4	
Quartz	-	17 Global	Drilling	24,4	35.0	
2. Well Use: [.] Dor	nitoring	[] Other				
3. Date Well Comple Driller's estimate	ted:	7 00 NA	Well Dis	infected [] Yes [X] No	
1 Date Permanent Pr	ımın İnctal	ied 132 fel	-		_	
5. Pump Capacity	<i>]</i> + (4	_gpm S∈	et at (deptl	1) 1/	<u>† </u>	
6. Pittess Adapter Mc	odel and iv	tanutacturer:	A #-			
7. Well Cap Type and 8. Pressure Tank: Wo	l Manufac	turer	N #4	tino Air E	IVes I INc	····
9. Pump System Disi	nfected: [1 Yes [1 No	из. Сар Э	uve An. [lics []ivo	
10. Name of Pump Co						
11. Pump Installer:			L	icense#_		
•				• .		
12.	n Contrac	tor Signature	L	icense #		
Licensed Fun	ip Comiac	noi bignature				
Illinois Department of						
Division of Environme		th				
525 W. Jefferson Stree Springfield, IL 62761	ST.					
			DO Not	write on the	se lines	

IMPORTANT NOTICE: This State Agency is requesting disclosure of information that is necessary	to acc	ompli	ish th
statutory purpose as outlined under Public Act 85-0863. DISCLOSURE OF THIS INFORMATION IS MA	NDA	TORY	. Th
form has been approved by the Forms Management Center.			

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	<i>(</i>
GEOLOGICAL & WATER SURVE	Y WELL RECORD
13. Property Owner	Well # [M(a) 0]
14. Driller N. Dia School Name of Drilling Company Boast Lovayour	License #15
Name of Drilling Company Cont Longy cor	Compa, 16.
Permit No.	Date Issued
Permit No. 17. Date Drilling Started 117100 18. Well SITE address 605 East US Hard 36 Township Name Garrett	1 11/105 2 10
18. Well SITE address 625' East US Hard 36	5-105cora 11-617-3-19
Township Name Garrett	Land 1D#
Location: a. County Douglas	3/2
b. Township 1600 Range 75 Section c. Quarter 414 Quarter 10 Quarter d. coordinates: Site Elevation	
d coordinates: Site Elevation	ft.(msl)
22. Casings, Liners*, & Screen Information	
Diam (in.) Material Joint Slot Size From	n (ft.) To (ft.)
2 St. Steel Threaded O. 010" 25	34,7
The state of the s	For Survey Use Only
	Olily .
(*)	
(List reason for liner, type of upper and lower seals ins	talled)
23. Water from Sity Clay at a depth of 2	II. 10 577 II.
a. static water level 11,02 ft. below casing which is b. pumping level is ft. pumping gpm a	effer numping for hours
b. pumping level is it. pumpinggpin a	itter pamping fornours
24. Earth Materials Passed Through	From (ft.) To (ft.)
	0 218
SIFTY CIAV	26
Organic Stity Clay Silty Clay	31.8 34.1
291401	24.7 350
NI TY NO Y	
, ,	
- Commence - Commence	39,700
Managar Managa	
	2000
Annual Control of the	
500-0-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	
MARKET TO THE STATE OF THE STAT	***************************************
Washington Washington Washington	
	A CONTRACTOR OF THE CONTRACTOR
Management of the second of th	
CODNITION CIT AT CALL A LANGE	
(If DRY HOLE, fill out log & indicate how hole was se	area)
	.÷
25. Licensed Water Well Contractor Signature	License Number

W.	म ह	Cons	•	ction	. and	porf
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'PE OR PRESS FIRMLY WITH BLACK INK PEN MPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

1. Type of Well: a. D b. Bored Well: Bu	riven We	II: Casing dian	ni No	in. Depth	1ft.	
Hole Diameter	in. to	i jies [j	in. to	ft.:	in. to	ft.
c. Drilled Weil: PV Hole Diameter	C casing	Formation pa	cker set at	depth of	ft.	
Hole Diameter	in. t	oft.; _	in. to_	ft.;	in. to	ft.
Type of Grout	# of Bags	Grout Weight	From (ft.) To (ft.)	Tremie Depth	(ft.)
		·				_
d. Drilled Well: Ste	el Casing	Mechanic	ally Drive	n [X] Yes	[]No	a.
Type of Grout				and the second second	in. to	
Type of Grout	# of Bag	Grout Weight	From (II	.) 10 (TL)	Tremie Depth (1.,
NA	, i	P10007.11				
		,			. :	
e. Well finished wit	hin: 💢].	Unconsolidated	Materials	[] Bed	lrock	_
f. Kind of Gravel Sar	id Pack	Grain Size/S	upplier#	From (f	t.) To (ft.)	
Quartz		#8 Clobal	Willing			
Quartz		17 Clobal			14	
2. Well Use: [] Dor	mestic	[] Irrigation	[] Con	nmercial	Livestock	
ĭv∕i Mo	nitoring	Γ 1 Other				
3. Date Well Complete Driller's estimated	l well yiel	d NA	gpm		7 7 7 7	
4 Ligte Permanent Pi	ımn inctal	en niet				
5. Pump Capacity/	NA.	gpm Se	et at (depth	<u>) _/\/}</u>	ft.	
6. Pitless Adapter Mo	del and M	lanufacturer:	$\Delta = I \vee I$	<u> </u>		
7. Well Cap Type and 8. Pressure Tank: Wo	i Manuiac	le ALP g	als Can	tive Air I	l Yes [l No	
9. Pump System Disir	rking Cyc rfected: [1 Yes [1 No	113. Oup }		1 100 []110	
10. Name of Pump Cor						
11. Pump Installer:			L	icense # _		•
12.			L	icense#_		
Licensed Purr	p Contrac	tor Signature				
Illinois Department of	Public He	alth				·
Division of Environme			P-1-18-14-14-14-14-14-14-14-14-14-14-14-14-14-		-	
525 W. Jefferson Stree	t	•	•			
Springfield, IL 62761		2	DO Maria		on lines	
			DOM OU	write on the	2C 1111C2	

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IL 482-0126 rev. 12/98

	Date
GEOLOGICAL & WATE	R SURVEY WELL RECORD
13. Property Owner	Well # MLD (XS)
14 Driller in Supra for C	
Name of Drilling Company Vocas Et	License # 16.
Permit No	Date Issued
19 Well SITE address with Such is	Hum 30 Tascola 16 619531
Township Name 14500 C	Land ID #
Subdivision Name	Lot #21
Location: a. County Price as	DOL R
b. Township Kange 86	Section 29
c & lb.) Quarter S la) Quarter S la .	Ouarter
d. coordinates: Site 22. Casings, Liners*, & Screen Information	Elevation ft.(msl)
22 Casings Liners* & Screen Information	
Diam (in.) Material Joint Slot	Size From (ft.) To (ft.)
2 St. Steel Threader O.D.	or 11 1 127 Lilili
3. SIECHTOI FEATA UNA	10.54.10)
	Only
(*)	
(*)(List reason for lines, type of upper and lo	wer seals installed)
23. Water from \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	repin of $\gamma_* \mathcal{O}$ is to $\underline{\mathcal{O}} \sim 1$.
a, static water level $log = 70$ H. Delow casin	g which is ii. above ground
b. pumping level is ft. pumping _	gpm after pumping forhours
•	· · · · · · · · · · · · · · · · · · ·
24. Earth Materials Passed Through	From (ft.) To (ft.)
Silty May	0 60
SIITY Clay	
Sand	5.0 6.3
Silty Olay	6.3.14.0
	Teaching the second sec
TAIN/ENGINEERING WATER CONTRACTOR OF THE PROPERTY OF THE PROPE	
	A A A A A A A A A A A A A A A A A A A
A STATE OF THE STA	
The terminal of the terminal o	
(If DRY HOLE, fill out log & indicate how	pola was sealed)
(II DK I HOLE, III out tog & indicate now i	luic was scaled)
,	·
25. Licensed Water Well Contractor Signature	License Number

25. Licensed Water Well Contractor Signature

PE OR PRESS FIRMLY WITH BLACK INK PEN MPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

Type of Well: a. D Bored Well: But Hole Diameter c. Drilled Well: PV Hole Diameter	ried Slab in. to	[] Yes [] o ft.;_	No in. to	ft.;	in. toft. ft. in. toft.
Type of Grout	# of Bags	Grout Weight	From (ft.) To (ft.)	Tremie Depth (ft.)
				-	
d. Drilled Well: Sto Hole Diameter	<u>ம</u> in. to	o <u>1'7. O</u> ft.; _	in. to_	ft.;	in. toft.
Type of Grout	# of Bags	Grout Weight	From (ft) To (ft.)	Tremie Depth (ft.)
NA					
e. Well finished wit	hin: 💢 l	Jnconsolidated	Materials	[] Bed	lrock
f. Kind of Gravel San	d Pack	Grain Size/S	upplier#	From (f	t.) To (ft.)
Quartz.		#76 Global	Dr.flina		
Quartz		#7 Clotal	Drillina	4	15
2. Well Use: [] Don [] Mo 3. Date Well Complet Driller's estimated 4. Date Permanent Pu 5. Pump Capacity 6. Pitless Adapter Mo 7. Well Cap Type and 8. Pressure Tank: Wo 9. Pump System Disin 10. Name of Pump Con	nitoring	Other	Well Disgpm et at (depth	infected [] Yes No ft.
11. Pump Installer:			L	icense#	
12			L	icense#_	,
Licensed Purr	p Contrac	tor Signature			
Illinois Department of Division of Environme 525 W. Jefferson Stree Springfield, IL 62761	ntal Healt		DO Not	write on the	ese lines

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statutory purpose as outlined under Public Act 85-0863. DISCLOSURE OF THIS INFORMATION I	SMANDATORY. Thi
form has been approved by the Forms Management Center.	

IL 482-0126 rev. 12/98

		Date	//
CEOI OCU	CAL & WATER SURVE	, Coagliaw va	DRD
13. Property Owner			Well# ///// //
14. Driller D. Dusche	· ·	License #	
Nome of Drilling Company	Parket I come	as Assa	any 16
Name of Drilling Company	27	Date Issued	7
17. Date Drilling Started	The transfer of the second second	and the same of th	
18. Well SITE address	Det US Have ?	7 Tuscola	L 61953
Fownship Name 10 cools		Land ID#	20
Subdivision Name		Lot#	
Location: a. County Service le	, *	,	
b. Township	ge XE Section	_3	
- C. V. Ougeton - 186" (Dunetor C Duarter		
d coordinates:	Site Elevation	ft.(msl)
22. Casings, Liners*, & Screen I	ntormation		
Diam. (in.) Material Jo			
2 stitelling	Led 0.0104 K.	0 14.7	For Survey
			Only
			,
	1000000		
(*)	of upper and lower seals in	stalled)	
		3 ta i i Cu)	4 -
22 Water from 5 11 4 / / /	at a depth of	f ft to /	4.7 ft.
23. Water from Silty Ole	at a depth of	ft. to /	<u>4.7</u> ft. ground
23. Water from SITY Old-	at a depth ofat below casing which is	ft. to <u>/</u> in. above	<u>%. 7</u> ft. ground r hours
23. Water from Silty Alexander level 4.75 f	at a depth ofat below casing which is	ft. to <u>/</u> in. above	9.7 ft. ground f hours
a. static water level 4.75 f b. pumping level is	at a depth of thelow casing which is the pumpinggpm	ft. to <u>/</u> in. above	rhours
23. Water from Silty Alexander a. static water level 4. So f b. pumping level is f f f f f f f f f f f f f f f f f f	at a depth of the below casing which is the pumpinggpm bugh	ft. to / in. above after pumping for	rhours
 23. Water from Silty Older a. static water level A Silt b. pumping level is f 24. Earth Materials Passed Thro 	at a depth of thelow casing which is the pumpinggpm	ft. to / in. above after pumping for	rhours
23. Water from Silty Alexander a. static water level 4. So f b. pumping level is f f f f f f f f f f f f f f f f f f	at a depth of the below casing which is the pumpinggpm bugh	ft. to / in. above after pumping for	rhours
23. Water from Silty Alexander a. static water level 4. So f b. pumping level is f f f f f f f f f f f f f f f f f f	at a depth of the below casing which is the pumpinggpm bugh	ft. to / in. above after pumping for	rhours
23. Water from Silty Alexander a. static water level 4. So f b. pumping level is f f f f f f f f f f f f f f f f f f	at a depth of the below casing which is the pumpinggpm bugh	ft. to / in. above after pumping for	rhours
23. Water from Silty Alaca a. static water level 4. 25. ft b. pumping level is from from from from from from from from	at a depth of the low casing which is the pumping gpm ough	ft. to / in. above after pumping for	rhours
23. Water from Silty Alexander a. static water level 4. 6 f. b. pumping level is f. f. f. f. f. f. f. f. f. f. f. f. f.	at a depth of the low casing which is the pumping gpm ough	ft. to / in. above after pumping for	rhours
23. Water from Silty Alaca a. static water level 4. 25. ft b. pumping level is for a static water level 4. 25. ft for a s	at a depth of the low casing which is the pumping gpm ough	ft. to / in. above after pumping for	rhours
23. Water from Silty Alaca a. static water level 4. 25. ft b. pumping level is from from from Silty Clay	at a depth of the low casing which is the pumping gpm ough	ft. to / in. above after pumping for	rhours
23. Water from Silty Alaca a. static water level 4. 25. ft b. pumping level is from from from Silty Clay	at a depth of the low casing which is the pumping gpm ough	ft. to / in. above after pumping for	rhours
23. Water from Silty Alaca a. static water level 4. 25. ft b. pumping level is from from from Silty Clay	at a depth of the low casing which is the pumping gpm ough	ft. to / in. above after pumping for	rhours
23. Water from Silty Alaca a. static water level 4. 25. ft b. pumping level is for a static water level 4. 25. ft for a s	at a depth of the low casing which is the pumping gpm ough	ft. to / in. above after pumping for	rhours
23. Water from Silty Alaca a. static water level 4. 25. ft b. pumping level is from from from Silty Clay	at a depth of the low casing which is the pumping gpm ough	ft. to / in. above after pumping for	rhours
23. Water from Silty Alaca a. static water level 4. 25. ft b. pumping level is from from from Silty Clay	at a depth of the low casing which is the pumping gpm ough	ft. to / in. above after pumping for	rhours
23. Water from Silty Alaca a. static water level 4.25 f. b. pumping level is f. f. f. f. f. f. f. f. f. f. f. f. f.	at a depth of the low casing which is the pumping gpm ough	ft. to / in. above after pumping for	rhours
23. Water from Silty Alaca a. static water level 4.25 f. b. pumping level is f. f. f. f. f. f. f. f. f. f. f. f. f.	at a depth of the low casing which is the pumping gpm ough	ft. to / in. above after pumping for	rhours
23. Water from Silty Alaca a. static water level 4.25 f. b. pumping level is f. f. f. f. f. f. f. f. f. f. f. f. f.	at a depth of the low casing which is the pumping gpm ough	ft. to / in. above after pumping for	rhours
23. Water from Silty Alaca a. static water level 4.25 f. b. pumping level is f. f. f. f. f. f. f. f. f. f. f. f. f.	at a depth of the low casing which is the pumping gpm ough	ft. to / in. above after pumping for	rhours

License Number

25. Licensed Water Well Contractor Signature

7 T	Cons	tion	port
₩₩	_ADBH?	LXUB	JULE
			4

PE OR PRESS FIRMLY WITH BLACK INK PEN MPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

c. Drilled Well: PV	ed Slab in. to C casing	Yes [] ft.; Formation pa	No in. to_ cker set at	ft.;	in. to	
Type of Grout						
-	·					
d. Drilled Well: Stee	el Cacino	Mechanic	ally Drive	1 1 Ves	г 1 No	1
Hole Diameter	in. to	9 <u>/, ()</u> ft.; _	in. to_	ft.;	in. to	_ft.
Type of Grout	# of Bags	Grout Weight	From (ft) To (ft.)	Tremie Depth (1	<u>f</u> t.)
Fentonite/Come			2.7	68	67	
LANDINIE CHIE		44455	<u> </u>	<i>C</i>		
e. Well finished with	.in. J. #1 I	Inconsolidated	Materials	I l Rec	Irock	.1
		Grain Size/S				,
f. Kind of Gravel Sand						
Wyar +7		#2 Clubra				
Guartz		71 Cloral	Ocilline	<i>73.7</i>	<u>85</u>	
2. Well Use: [] Don	nestic	[] Irrigation	[] Con	nmercial	[] Livestock	
3. Date Well Complete	vitoring	l ()ther				
3. Date Well Complete Driller's estimated	ea: <u> </u>	d NA	gpm	infected [Tree [Mino	
4 Date Permanent Pur	mn Install	ed NA		<u> </u>	_	
5. Pump Capacity	1 A	_gpm So	et at (depth	m_{N} (c	ft.	
6. Pitless Adapter Moo 7. Well Cap Type and	dei and iv. Manufac	tanutacturer:	N44			
8. Pressure Tank: Wor	king Cyc	le <u>NA</u> g:	als. Cap	tive Air: [] Yes [] No	
9. Pump System Disin	fected: [Yes [] No	0		• •	
10. Name of Pump Con	npany	NA.	.,	· · · · · · · · · · · · · · · · · · ·		
11. Pump Installer:/	1A		L	icense#_		
12		•	. т	icense #		
12. Licensed Pump	р Соптас	tor Signature				
		. 141				
Illinois Department of I Division of Environment					<u> </u>	
525 W. Jefferson Street			· · · · · · · · · · · · · · · · · · ·			
Springfield, IL 62761			DO Not	write on the	see lines	4
and the second s			DOM OU	WITE OIL BIL	-9C 1111C3	

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CECT OCICAL	P. WATER	SURVEY WELL	RECORD

	GEO!	LOGICAL &	WATER S	SURVEY V	VELL RECOR	D (
3. Property C	Owner	,,			W	/ell# ہے\نے	بلا
4. Driller 🔄), DusQ	her_			License# .		l
lame of Drill	ing Compan	y <u>Fran</u>	Long	Vear	Tongs .	/ 	_16.
ermit No.			_	Date	Issued		
7. Date Drill	ing Started	112 EV	+ 45	1/11/11 21	o Turade	14 619	7531
o. Well Still Township Nat			et de la companya de la companya de la companya de la companya de la companya de la companya de la companya de	⊤	d ID#		20.
الاستأمانية الطريا	inmo			I.nt	#		21
ocation: a. C b. Townsh	County 1704	calas			21		6
b. Townsh	ip <u>//<i>o</i>∧/</u>	Range	7 <u>F</u> S	ection	<u> </u>		-
c. <u>A F</u>	Quarter <u>Av</u>	(1) Quarter	Site Elev	ation	ft.(msl)		
2. Casinos: I	.iners*. & Sc	reen Informa	onto		ft.(msl)		
Diam. (in.)	Material	Joint	Slot Size	Prom (1	t.) To (ft.)		
2	St. Steel	Threated	0.40"	80	84.7	For Su	rvey Us
						O	nly
			,				
*)							
(List)	reason for line	r type of uppe	r and lower	seals installe	(d)	100	
3. Water from	т <u>> а е</u> .	(2 10 hala	at a dept	h of <u>74.</u>	3 ft. to 84 O in. above gr	round	
a. static W	ater level 5	<u>ք, Էդ</u> վե ՍԵՐՕ քե ոստ	w casing w nino	oom after	pumping for	hours	
o. բառւբու	ig level is	Tr. Puni	P5	5p a.r.o.	pamping to		
24. Earth Ma	terials Passe	d Through			From (ft.)	To (ft.)	
SIH	y (Ja	W	240) Hamman Amo		Û.	45,0	
Play	124 Si	1+			45.0	46.1	
SILL	!				4.1	50.5	
Sano	L		-		50.5	53.5	
Sitt	-				53.5	55.5	
Silty	/ Cla	V		- 3	55.5	56.6	
San	(-		56.6	58.B	
C:1+	v Clar	/			58.8	71,0	
Sen	4				71.0	71.8	
Silt					71.8	74.3	
Sano	L		,		74.2	84.8	
SILty	V Clay	,			84.8	940	
,		-			:		
(If DRY HO	DLE, fill out	log & indicat	te how hole	was sealed	1)		

25. Licensed Water Well Contractor Signature

'PE OR PRESS FIRMLY WITH BLACK INK PEN MPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

a Deillad Wall, Di	ried Slab in. to /C. casing	Yes []	No in. to_ cker set at	ft.;	in. to			
					in. to			
Type of Grout	# OI Dags	Glour Weight	110m (ac.	10(10)	Memie Behm (t	,		
		· · · · · · · · · · · · · · · · · · ·						
d. Drilled Well: Ste Hole Diameter	el Casing-	Mechanic 25.0ft.;_	ally Driver in. to_	Yes ft.;	[] No in. to	_ft.		
				and the second second	Tremie Depth (f			
Bentaite Remen		i						
1								
e. Well finished wit	hin: [K] [Inconsolidated	Materials	[]Bed	rock			
f. Kind of Gravel San								
Quartz		#12 (Ictal						
Quartz	23-73-X-10-2	A7 Éldel	Drillin	166.5	72			
2. Well Use: [] Domestic [] Irrigation [] Commercial [] Livestock								
11. Pump Installer:	MA		L	icense#_	1			
12. Licensed Pur	p Contrac	tor Signature	L	icense #	·			
Illinois Department of Division of Environme 525 W. Jefferson Stree Springfield, IL 62761	Public He ntal Healt	alth		write on the				

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	GEO:	LOGICAL &	WATER S	SURVEY V	VELL RECOF	SD.	
3. Property (V	Vell# <u>آياد</u>	
14. DriÎler 🔔	D. Dus	Ohec			License #		1
Name of Drill	ing Compan	y	ا ا	dyzar	MONTE	4 s 1 🗸	16.
Permit No				Date	Issued	- 1	
7. Date Drill	ing Started _		`	1	-	11 11	602
8. Well SIT	E address 🛵	JE Pue	<u>t (18 f</u>	44 34	Tuscale	11-61	20.
Township Na		10			d ID# #		20. 21
Subdivision N	lame			LOI	#		
Location: a. C	ounty	40105	ې سسر و	ection _=	έ/.		.
b. Townsh	ip <u> _A </u>	Kange	<u>, </u>	buarter			
d spording	_Quarter 🛬	(A) Quarter	Site Flex	vation	ft.(msl)		1-:-
22. Casings, I					211(1132)		
Diam. (in.)			Slot Size	From (fi	t.) To (ft.)		1
Q.	St_5-1	Throade	17.191		7/.7		
<u> </u>		I FY COAC	11.11.				irvey Us
						(Only
//							
(*)							
(List	reason for line	r, type of upp	er and lower	seals installe	:d)	3 1 0	
23. Water from	m <u></u>		at a dept	th of <u>6-8 - "</u>	<u>}</u> ft. to <u>/∌</u>	π.	
a. static w	ater level 🖺	F33 It' pelo	w casing w	nich is $\frac{2}{6}$	in. above g	угоина В омеа	
b. pumpin	ig level is	n. pum	iping	_gpm after	pumping for		
24. Earth Ma	terials Passe	d Through			From (ft.)	To (ft.)	
24. Latui ivia	. /1 (d Imougn		- 4055000		1. 11	
<u> </u>	ry Cile	XY				4415	
5:11	~~ [′]				46.4	47.4	
511t	U Olo	ιV		44502.70	47,4	47,2	
5.1	4-	/		·	48.2	49,3	!
511-	, Olas	nJ			49.3	67.9	!
San	d	f ·	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		47.9	109.10	
\f\.	v Cla	. V		+ 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	69.10	75.0	-
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Water Control of the		******	·				ı
*1979**********************************	····			- 5700			
Marco		MARINITY (37.743111011			
				968			
		•				j .	

25. Licensed Water Well Contractor Signature

(If DRY HOLE, fill out log & indicate how hole was sealed)

PE OR PRESS FIRMLY WITH BLACK INK PEN

MPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

1. Type of Well: a. Driven Well: Casing diamin. Depthft. b. Bored Well: Buried Slab [] Yes [] No Hole Diameterin. toft.;in. toft.;in. toft. c. Drilled Well: PVC casing Formation packer set at depth offt. Hole Diameterin. toft.;in. toft.	13. Pr 14. D Name Permi 17. D 18. W
Type of Grout # of Bags Grout Weight From (ft.) To (ft.) Tremie Depth (ft.)	Town
	Subdi
	Locat
d. Drilled Well: Steel Casing Mechanically Driven [X] Yes [] No Hole Diameter 19 in. to 25,5ft.; in. to ft.; in. to ft.	b. c. d.
Type of Grout # of Bags Grout Weight From (ft.) To (ft.) Tremie Depth (ft.)	22. C Diar
Gentunite/Center 6 3.9 5 64	
e. Well finished within: Unconsolidated Materials [] Bedrock	(*)
f. Kind of Gravel Sand Pack Grain Size/Supplier # From (ft.) To (ft.)	23. W
Quartz 18 Global Brilling 71,1 72.0	23. W
Quartz My Global Drilling 72.0 79.5	b.
2. Well Use: [] Domestic [] Irrigation [] Commercial [] Livestock	24. E
► A Monitoring [] Other	\subseteq
3. Date Well Completed: 1115/00 Well Disinfected [] Yes No. Driller's estimated well yield NA gpm	
4. Date Permanent Pump Installed NA	-
5. Pump Capacity / gpm Set at (depth) / ft.	
6. Pitless Adapter Model and Manufacturer: // / / /	
7. Well Cap Type and Manufacturer	
9. Pump System Disinfected: [] Yes [] No	
9. Pump System Disinfected: [] Yes [] No 10. Name of Pump Company At At At At At At At At At At At At At	
	-
11. Pump Installer: License #	
12. License #	<
Licensed Pump Contractor Signature	/~1
Illinois Department of Public Health	-
Division of Environmental Health	
525 W. Jefferson Street	
Springfield, IL 62761 DO Not write on these lines	(If
DO NOT WITH ON WHOM WHOM	(**

IMPORTANT NOTICE: This State Agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Public Act 85-0863. DISCLOSURE OF THIS INFORMATION IS MANDATORY. This form has been approved by the Forms Management Center.

IL 482-0126 rev. 12/98

	,	
GEOLOGICAL & WATER SURVEY W	ELL RECORD	
13. Property Owner	Well# MWOSI	
14. Driller D. Duscher	License #16.	J.
Name of Drilling Company Port	Issued16.	
Permit No. Date 17. Date Drilling Started 11/15/100	155000	
17. Date Drilling Started 11 16 1000	Tuscola 14 6/75.31	9.
18. Well SITE address 1935 Eart 115 Huy 316. Township Name Ages 4	d ID# 20.	
Subdivision NameLot	# 21.	
Location: a. County Transactor		;
		Ė
c. Sw Quarter Sw Quarter NF Quarter		<u>:</u>
c. Sin Quarter Sin Quarter V Quarter d. coordinates: Casings, Liners*, & Screen Information Slet Size From (ft.	ft.(msl)	i
22. Casings, Liners*, & Screen Information	, T- (A)	Ë
Diam. (in.) Material Joint Stot Size From (it	.)	-
2 st Steel Threader 11.1763 74.5	79.5 For Survey Us	e
	Only	
(*)		
(List reason for liner, type of upper and lower seals installe	d)	
as were seen so we at a depth of 10 s	て ff to そんへ ff.	
a. static water level 19 15 ft. below casing which is	in. above ground	
b. pumping level is ft. pumping gpm after	pumping forhours	
	From (ft.) To (ft.)	
24. Earth Materials Passed Through		
SiltyClay	<u>a</u> 43,4	
Sitt	43,4 51,4	
Soud	51.4 54.1	
O Land Silt	54.7 63.1	
	63.1 66.0	
Silfi		
Sand	66,0 66.6	
Claver Silt	66.6 72.8	
Sarl	72.8 79.5	
cilt	79.5 80.0	
1716-1615	80.0 81.1	
	81.1 81.7	
	719 766	
L'MATERIA DIT	161.7 03.7	
(CDDV HOLE CII and Lag & indicate how hele was regarded	1)	
(If DRY HOLE, fill out log & indicate how hole was sealed	u	

25. Licensed Water Well Contractor Signature

\mathbb{W}	T P	Cons	•	tior	3.0	port
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PE OR PRESS FIRMLY WITH BLACK INK PEN APLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

Type of Well: a. D b. Bored Well: But	riven We ried Slab	ll: Casing dian	ni No	in. Depth	nft.	
Hole Diameter,	in. t	oft.;	in. to_	ft.;	in. to	ft.
c. Drilled Well: PV	C casing	Formation pa	cker set at	depth of	ft.	.0
Hole Diameter	in. t	ott_;	in. to_	nt.;	in. to	nt.
Type of Grout	# of Bags	Grout Weight	From (ft.) To (ft.)	Tremie Depth (ft.)
			,	·		
						ŀ
d. Drilled Well: Ste Hole Diameter	el Casing	Mechanic	ally Drive	n [X] Yes	[] No in to	ft.
	-	and the second second second	,		Tremie Depth (
Centurite/Comen						
	الم					
e. Well finished wit	hin: [X]	Unconsolidated	Materials	[] Bed	lrock	,, !
f. Kind of Gravel San	d Pack	Grain Size/S	upplier#	From (fi	t.) To (ft.)	
Quartz		#8 Cholm	χ_{i}^{*} $\ \ _{D_{i}}$	78.5	79	
Quartz						
2. Well Use: [] Don [×] Mo 3. Date Well Complete	mestic	[] Irrigation	[] Con	nmercial	[] Livestock	
[:≺] Mo 3. Date Well Complet	nitoring ted: <u> [</u>	Other	Well Dis	infected [Yes No	
Driller's estimated	d well yiel	d <u>/\/</u> fr	gpm			
4. Date Permanent Pu	ımp Instal	led <u>NP</u>	4 -4 (44	N 21A	A	
5. Pump Capacity	del and M	_gpmst	tat(depu ∡JÀ	1) <u>M M</u>	1t.	
7. Well Cap Type and	l Manufac	turer	NA			
6. Pitless Adapter Mo 7. Well Cap Type and 8. Pressure Tank: Wo	rking Cyc	le <u>AA g</u>	als. Cap	tive Air: [] Yes [] No	
9. Pump System Disii	nfected: [Yes No)			
10. Name of Pump Cor	mpany	_/J.R		, , ,		
11. Pump Installer:		JA .	L	icense#_		
12.		•	·	icense#		
12. Licensed Purr	p Contrac	tor Signature		_		
Illinois Department of	Public He	alth	٠			
Division of Environme						
525 W. Jefferson Stree	t	. 2	• .			
Springfield, IL 62761	,	•				
			DO Not	write on the	se lines	

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. Do	···· — / / /	_	<u></u>
GEOLOGICAL & WATER SURVEY W	FII RECORD)	
13. Property Owner	We We	:11 <i># <u>(117.</u>1.</i>)	num
14. Driller D. Dascher	License #	··· <u> · · · · · · · · · · · · · · · · ·</u>	15.
Name of Drilling Company Court Corra Your			16.
Pormit No. 1 Date I	ssued		
17 Date Drilling Started 1118 160	•		
18. Well STTE address in DG Park US Italia King	Tusorda 1	L 6/953	<u> </u>
Township Name O Land	ID#		20.
			21.
Location: a. County Don Nas			
b. Township 11-11 Range 7/ Section 3			
c. NE Quarter SE Quarter NW Quarter	& (mal)		
d. coordinates: Site Elevation 22. Casings, Liners*, & Screen Information	1t.(msi)		
Diam. (in.) Material Joint Slot Size From (ft.)	To (ft.)		
	(2)		
A St. Steel Threater 0,010 97	13-11-7		rvey Use
		0	nly
(*)			
(*) (List reason for liner, type of upper and lower seals installed)	11 0	
		* <u>f~</u> ft.	
a. static water level of the below casing which is of the pumping level is ft. below casing which is gpm after p	_in. above gro	Bunu houre	
b. pumping level is it. pumping gpin after p	umping ioi	пошь	
24. Earth Materials Passed Through	From (ft.) T	To (ft.)	
Carl		1 -7 -7	
LITY CIAY			
Clarcy Silt	7/1/	57.11	
Sand	57.6	58.5	
Clavey Silt	58.6	79.0	
571	790	20 2	
	707	2000	
	17-21	17, 7	
Sand	79.9	77,11	
S:1+	97.0	17.6	
SILLY Clay	97.10	98.0	
	97 ()	101. 4	
all was the state of the state	in it	100 1	
LIAYEYNIT	1111111	454	

(If DRY HOLE, fill out log & indicate how hole was sealed)

25. Licensed Water Well Contractor Signature

PE OR PRESS FIRMLY WITH BLACK INK PEN

.MPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

Type of Well: a. Driven b. Bored Well: Buried Sl Hole Diameteri c. Drilled Well: PVC cas Hole Diameteri	ab [] Yes [] n. toft.; _ ing Formation pa	No in. to_ acker set at	ft.;	in. to ft.					
Type of Grout # of E	ags Grout Weight	From (ft.)) To (ft.)	Tremie Depth	<u>(ft.)</u>				
					ĺ				
			-	awaawaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	_				
d. Drilled Well: Steel Cas Hole Diameter	ing Mechanic n. to 77 ○ ft.:	ally Driver in. to	1 [X] Yes ft.:	[] No in. to	ft.				
	Bags Grout Weight			·					
					1				
Barbaite Kenny 5	auana	Tile	plo. 1	65.0					
	-								
e. Well finished within: [(] Unconsolidated	d Materials	[]Bed	rock	_				
f. Kind of Gravel Sand Pack	Grain Size/S	Supplier#	From (ft	.) To (ft.)					
Guartz	#Z Clohal	Dr. H. can	717	725					
_	1 1								
Quartz		,							
 Date Well Completed:	2. Well Use: [] Domestic [] Irrigation [] Commercial [] Livestock [] Monitoring [] Other 3. Date Well Completed:								
9. Pump System Disinfected	l:[]Yes[]N	0 ·	:-						
10. Name of Pump Company	$$ λA								
11. Pump Installer:	VA	Li	icense#						
12.		Li	icense#						
12Licensed Pump Con	tractor Signature								
Illinois Department of Public Division of Environmental H 525 W. Jefferson Street Springfield, IL 62761									
		DO Not v	write on the	se lines					

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		LOGICAL &	WATER S	SURVEY W	ELL RECOR		161 2000 5
13. Property (Owner	· /			License #	Vell# <u>/Y)/</u> /	15
14. Driller Name of Drill	ing Compan	y Gord		-inc - 1	Toosaaria		16.
Permit No.	ing Compan	y <u> </u>	11111		Issued		
17. Date Drill	ing Started	11111110	\cap	•	_		
18. Well SIT	E address 🛵	OF FAST	- US H	1111 3k	Ticola,	11 1-191	<u> </u>
Township Na	me <u>/ 1</u> 7	2++		Land	11D#		20.
Subdivision N	lame			Lot	#		21.
Location: a. C	ounty <u>lo</u>	udias.	C		1		
b. Townsh	ip <u>//_A/</u> Quarter <u>5 /</u>	Kange	<u> </u>	ection —	<i>6</i>		
d. coordina	Tografier	<u>dianter</u>	Site Elev	ation	ft.(msl)		
22. Casings, I	iners*. & So	reen Inform	ation		200(1100-1)		
Diam. (in.)	Material	Joint	Slot Size	From (ft.) To (ft.)		
2	3+ 4	Through	D.DO	80.5	83.0	For S	urvey Use
	المناسب المسا	6:0-6:-{:-1/					urvey Ose Only
		· · · · · · · · · · · · · · · · · · ·					
(*)	<u>. </u>						
(T ist)	reason for line	r. type of uppe	er and lower	seals installed	i)		
23. Water from	m San	d	at a dept	th of <u>79.9</u>	ft. to <u>22</u>	<u>. () </u>	
a. static w	ater level 🔑	ু 🚄 ্ৰাt. belo	w casing w	hich is	in. above g	round	
b. pumpin	g level is	ft. pum	ping	_gpm after	pumping for	hours	;
24. Earth Ma	terials Passe	d Through			From (ft.)	To (ft.)	
5:11	, Ola	V			To	Heb	
Sin	To make the second			***************************************	41.6	43.7	
Micu	43/	14-	1111111111		43.7	47.2	
SIL	7		-	······································	472	48,9	
Olav	ev 311	+			48.9	73.0	
2004	1				73.0	78,7	
011-	~ .	AVIETUE VI		61 00000/mmanv=/40-/	78.7	79.9	
0000	<u> </u>				79.9	82.0	
714	iev Si	1+			73.0	86.0	
. 7	7						
- <u>- ,,,,,</u>			mandy 5 HOUSE STREET	- What			
				- 100			
(If DRY HO	LE, fill out	log & indica	te how hole	was sealed)		1
4,				•			

25. Licensed Water Well Contractor Signature

PE OR PRESS FIRMLY WITH BLACK INK PEN MPLETE WITHIN 30 DAYS OF WELL COMPLETION

AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

	12 D
1. Type of Well: a. Driven Well: Casing diamin. Depthft. b. Bored Well: Buried Slab [] Yes [] No	13. Prope
Hole Diameterin. toft.;in. toft.	Name of
c. Drilled Well: PVC casing Formation packer set at depth offt.	Permit N
Hole Diameter in. to ft.; in. to ft.; in. to ft.	17. Date
Type of Grout # of Bags Grout Weight From (ft.) To (ft.) Tremie Depth (ft.)	18. Well
	Township Subdivisi
	Location
	b. Tov
d. Drilled Well: Steel Casing Mechanically Driven [] No	c. <u>", , ,</u>
Hole Diameter (p_in. to 15, () ft.;in. toft.;in. toft.	d. coo 22. Casin
Type of Grout # of Bags Grout Weight From (ft.) To (ft.) Tremie Depth (ft.)	Diam. (i
Bentiniti Cenut 7 2.8 56 55	2
Dentron (Court T 2.0 36 13	130
e. Well finished within: [X] Unconsolidated Materials [] Bedrock	(*)
f. Kind of Gravel Sand Pack Grain Size/Supplier # From (ft.) To (ft.)	· /
Quartz #8/3kbal Drilling 61 62	23. Water
	a. sta b. pu
Quartz #76/ola Drilling 62 71.3	υ. μα.
2. Well Use: [] Domestic [] Irrigation [] Commercial [] Livestock	24. Earth
Monitoring [] Other 3. Date Well Completed: 115/00 Well Disinfected [] Yes [X] No	13:
Driller's estimated well yield MA gpm	00
4. Date Permanent Pump Installed NA	
5. Pump Capacity NA gpm Set at (depth) NA ft.	311
6. Pitless Adapter Model and Manufacturer: 7. Well Cap Type and Manufacturer A/A 7. Well Cap Type and Manufacturer	Cla
7. Well Cap Type and Manufacturer	Oth
8. Pressure Tank: Working Cycle A// gals. Captive Air: [] Yes [] No 9. Pump System Disinfected: [] Yes [] No	
10. Name of Pump Company $\mathcal{A}\mathcal{A}$	
and the second of the second o	<u> </u>
11. Pump Installer: License #	1 7
Tiermen #	-
12 License # Licensed Pump Contractor Signature	
Diversion I mile Constantion Organical	
Illinois Department of Public Health	
Division of Environmental Health	
525 W. Jefferson Street Springfield, IL 62761	
DO Not write on these lines	(If DR

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Date	110	/

GEOLOGICAL & WATER SURVEY WE		
13. Property Owner	"W	/ell# ///////de
14. Driller	_ License #	16.
Name of Drilling Company Front Donger	ssued	10.
Permit No. Date I:	ssued	
18. Well SITE address 25 Fast (15 Hard 34 To		L 61953
Township Name Land	ID#	20.
		21
b. Township 1/2/ Range 75 Section 26		
c. NF Quarter Ste) Quarter Ned Quarter		e
b. Township Kange 75 Section 36 c. ME Quarter 56 Quarter New Quarter d. coordinates: 22. Casings, Liners*, & Screen Information State Size From (ft.)	ft.(msl)	
22. Casings, Liners*, & Screen Information	Tr. (A.)	
Diam. (in.) Material John Siot Size Tront (it.)	Ιο (π.)	 - - - - -
2 StS-1 Strate 10.010" 16-3	704	For Survey U
		Only
(*)		
(List reason for liner time of upper and lower seals installed)		
23. Water from	ft. to/	ft.
a. static water level 7. 51 ft. below casing which is 25	_in. above gi	ound
b. pumping level isft. pumpinggpm after p	umping for	hours
24. Earth Materials Passed Through	From (ft.)	To (ft.)
Silty Clay	0	13.2
SHI	13.2	Marke
SILLY CLEAN	110.10	33.4
Claver	324	35.5
Chi	-21-6-	200
	<u> </u>	70.0
Clayer Sitt	4//), //	100 Land
	62.4	11.3
Clarey Sit	71.3	75,0
1000		et.ctatook
(If DRY HOLE, fill out log & indicate how hole was sealed)		
(II DK I HOLL, III out 10g & indicate now note was scaled)		

License Number

25. Licensed Water Well Contractor Signature

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A.4	」 しま			,,	ž z	·Ŀ	FUE

PE OR PRESS FIRMLY WITH BLACK INK PEN MPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

1. Type of Well: a. D	riven Wel	l: Casing dian	1i	n. Depth	ft.	
b. Bored Well: But	ried Slab	Yes	No			a
tole Diameter c. Drilled Well: PV	In. to	Formation pa	in. io_	depth of	in. to	11.
Hole Diameter	in to	roimanon pa	in, to	ft.:	in. to	ft.
Type of Grout	# of Bags	Grout Weight	From (ft.) 10 (11.)	Tremie Depth	(IL.)
				•		
d. Drilled Well: Ste	el Casing	Mechanic	ally Drive	n [X] Yes	[] No	_
Hole Diameter	_ <i>{⊘</i> _in. te	o <u></u>	in. to_	ft.;	in_ to	ft.
Type of Grout	# of Bags	Grout Weight	From (ft.) To (ft.)	Tremie Depth	(ft.)
<u>a</u>		1	i		56	
Bootsite /Cine	1 12		217	3 7		
			37 4 1.1	[] D-1		
e. Well finished wit	um: X1 r	Jnconsolidated	iviateriais	[] Bea	rock	
f. Kind of Gravel San	d Pack	Grain Size/S	upplier#	From (ft	.) To (ft.)	
Wear+2		#816lonal	Dallin	62.5	63	
Quartz		#7 Global I				
2. Well Use: [] Dor						
[- 7-3.4 -		7 1 AL				
3. Date Well Complet	ed:	<u> </u>	Well Dis	infected [] Yes X No	
Driller's estimated	i well yiel	d <u>NA</u>	gpm			
4. Date Permanent Pu 5. Pump Capacity	mp instan	gnm Se	et at (denth	<u>)</u>	ft.	
6. Pitless Adapter Mo	del and M	lanufacturer:	$\sim NA$			
7 Well Can Type and	Manufac	urer	A I Ar			
8. Pressure Tank: Wo	rking Cyc	le <u>////t</u> _ga	als. Cap	tive Air: []Yes []No	
9. Pump System Disir				. ' :.	•	-
10. Name of Pump Cor	mpany	_NH				
11. Pump Installer:		<u> </u>	L	icense#_		
12			L	icense#		
12. Licensed Purr	p Contrac	tor Signature		_		
Illinois Department of Division of Environme						
525 W. Jefferson Stree						
Springfield, IL 62761						
•			DO Not	write on the	se lines	

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Date	1/12	<u> </u>
		

		LOGICAL &	WATER S	SURVEY V	WELL RECOR	D	۱۶۰۰۰۰۱۲۰
3. Property C	Owner	1		, ****	Licence #	Vell# Muh	15.
4. Driller	ing Compan	ANG C	Le 1 . 13. 13	aueen	Tomps of	2	16.
vame of Diffi Permit No.	ing Compan	y <u> </u>	-)/ Date	e Issued	<u> </u>	
7 Date Drill	ing Started	11 6/16/1	,				
8. Well SITI	E address 🔬	5 Fast	115 Hus	V To I	15# ch 11 1d ID#	61952	19.
				Lai	nd ID #		20.
Subdivision N	lame			Lo	t#		_ 21.
ocation: a. C	ounty <u>De</u>	19105	- C	antina a	2/-		
b. Townshi	Duarter A	Kange	1 p 3	ection hiarter) ()) 	*	
d coordina	- Quarter - A	- Quarter	Site Elev	ation	ft.(msl)		
2. Casings, L	iners*, & So	reen Inform	ation		ft.(msl)	 	1
Diam. (in.)	Materia	JOHN	SIUL SIZU	110111(1	10 (10.7		
2.	4. 4-01	Threamed	0.010"	18.5	73.2	For Su	rvey Use
* .							nly
							•
*)		**************************************	NO.	amvor-,			
(Tist t	reason for line	r, type of uppo	er and lower	seals install	ed)	, prince	
3. Water from	n <u>Sate</u>	<u>u</u>	at a dept	h of <u>65%.</u>	子 ft. to <u>73</u> 月 in. above g	<i>∗ •</i> ft.	
a. static w	ater level (<u>).</u>	ft. belo	w casing w	hich is	K in above g	rouna	
b. pumpin	g level is	п. рип	bung ——	_gpin and	r pumping for	nodis	
4. Earth Ma	terials Passe	d Through		·····	From (ft.)	To (ft.)	
SIIt	v Cla	y				3.8	
Organ	hic S	1+VC	lav		31.8	34,7	
SITH	1.010x	7	7		34.7	3/0.3	
SIL					36.3	36.6	
Silty	Clas	<i>!</i>			36.6	42.0	
Clave		1			400	56.5	
	7 30	. ,			565	57.7	
A	an Si	1+			52.7	59.0	
SIL	7		· · · · · · · · · · · · · · · · · · ·		590	100	
	2 VII	+-			100	147	_
C+17	<u> </u>				64.0	153	
		<u>,</u>		-	65.3	72 7	_
Sano	$\langle 1_{a} \rangle$	14		,	72 7	79	-
	LE, fill out	log & indica	te how hole	was seale		أكملك	
		-					

License Number

25. Licensed Water Well Contractor Signature

Date	1/12	1
	7	-

<u>PE OR PRESS FIRMLY WITH BLACK INK PEN</u> COMPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

	ried Slabin. to /C casingin. to	[] Yes [] Dft.; _ Formation pa Dft.; _	No in. to_ cker set at in. to_	ft.;	in. to ft. in. to	ft.
Type of Grout	# of Bags	Grout Weight	From (ft.) To (ft.)	Tremie Depth (ft.)
		•				100
						The state of the s
d. Drilled Well: Ste Hole Diameter	el Casing	Mechanic	ally Drive in. to_	n [[x]] Yes ft;	[] No in. to	_ft.
Type of Grout	* "					
					76.0	
Bentonite/Cene		1				1
e. Well finished wit	bin: DAI	Incorpolidated	Materials	l Bed	rock	J
f. Kind of Gravel San	7.	Grain Size/S				
**-	IO T BCK		`			
martz _		#8 (310) pal		j		
Much?		#766b1	Dr. Hi	<u>4 731</u>	$\times (c)$	
2. Well Use: [] Dor	mestic	[] Irrigation	[] Cor	nmercial	[] Livestock	
[x] Mo 3. Date Well Complet	nitoring ted: 34 l	[] Other	Well Dis	infected []Yes [X]No	
Driller's estimated	d well yiel	Y NA	gpm		1 \$4	
4. Date Permanent Pu		led N				
 Pump Capacity Pitless Adapter Mo)AA	т.	
7. Well Cap Type and						
8. Pressure Tank: Wo	rking Cyc	le <u>/\/ -</u> \/ ga	als. Cap	tive Air: [] Yes [] No	
9. Pump System Disir	nfected: [] Yes [] No	3 , '			
10. Name of Pump Cor	mpany	NP.				
11. Pump Installer:	NE		L	icense#_	,,	
12			L	icense #		
12. Licensed Purr	np Contrac	tor Signature				
Illinois Department of	Public He	alth				
Division of Environme	ntal Healt					
525 W. Jefferson Stree	ŧ					
Springfield, IL 62761			DO Not	write on the	se lines	

IMPORTANT NOTICE: This State Agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Public Act 85-0863. DISCLOSURE OF THIS INFORMATION IS MANDATORY. This form has been approved by the Forms Management Center.

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		-	,,,
GEOLOGICAL & WATER SURVEY WE	LL RECOR	D	
12 Property Owner	W	/ell# /##:\	161
14. Driller D Duschier Name of Drilling Company Boart South Of Care Is Permit No. Date Is	_ License # .		1
Name of Drilling Company Boart Consultation	Bur per	y	_16.
Permit No Date Is	ssued <u>'</u>	/	
17. Date Drilling Started 1118100		11 /-10	C & 1
Permit No. 17. Date Drilling Started 1118 00 18. Well SITE address 25 Fast 45 144 36 Township Name 115001a	ID#	1 (<u>V-1)</u>	20.
			_ 21
Location: a. County Day did <			
b. Township II Range SE . Section 39	^		
b. Township Harl Range EE Section C. Alla Quarter Sur Quarter	c / 1	\ -	
d. coordinates: Site Elevation	II.(msi)		
c. A/A) Quarter SA Quarter Site Elevation 22. Casings, Liners*, & Screen Information Diam (in) Material Joint Slot Size From (ft.)	To (ft.)	=	
Diam. (in.) Material Joint Slot Size From (ft.)	37 7		
1-3 H. Steel Diseases Coldy 0300			rvey Us
			nly
	···		
(*)			
(List reason for liner, type of upper and lower seals installed)	Cft to SC	. 5 ft.	
23. Water from Sand at a depth of Sylver a static water level (24, 1) ft. below casing which is	in. above gi	round	
b. pumping level is ft. pumpinggpm after p	umping for	hours	
24. Earth Materials Passed Through	rom (ft.)	To (ft.)	
I Silta Okal	0	5.0	
	6.0	1-1	, 2
	1 0	1100	"Fame"
Siltu Clay	$I_{\mathcal{D}}$	40.0	
Silt'	42.3	51.0	
A CIT	51.0	54.0	
	EUO	690	
	$\mathcal{I}^{\tau_{\tau}}(\mathcal{I})$	244	
Clavey Nilt	57.0	58.U	
Oranic Silt	58.0	59.1	
Claver Silt	59.1	84.5	
Sand	74.5	85.5	
Clavey Silt	85.5	101.0	
- Andrew Control of the Control of t			
	,,,	XX	-

25. Licensed Water Well Contractor Signature

(If DRY HOLE, fill out log & indicate how hole was sealed)

PE OR PRESS FIRMLY WITH BLACK INK PEN MPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

1. Type of Well: a. D	riven We	II: Casing dian]i	n. Deptl	nft.	
b. Bored Well: But	ned Slab	[]Yes []	No in to	fi ·	into	ft.
c. Drilled Well: P	C casing	Formation pa	cker set at	depth of	ft.	
					in. to	ft.
Type of Grout	# of Bags	Grout Weight	From (ft.) To (ft.)	Tremie Depth	(ft.)
						ľ
d. Drilled Well: Ste Hole Diameter	el Casing in. to	Mechanic o <u>/ <i>O</i> / . </u>	ally Drive iп. to_	Yes	[] No in. to	 ft.
Type of Grout	# of Bags	Grout Weight	From (ft) To (ft.)	Tremie Depth	(ft.)
Perstasite/Cemen	t 8		3	88	87	
					,	
e. Well finished wit	hin: [X] l	Jnconsolidated	Materials	[] Bed	łrock	
f. Kind of Gravel San	d Pack	Grain Size/S	upplier#	From (f	t.) To (ft.)	
Quartz		#8 3 lobal	D' lios	94	94.3	
Quartz		#7/Blobal	Drilling	94.3	98.5	
2. Well Use: [] Don	mestic nitoring led:	I Irrigation I Other I OO I OO I OO I OO I OO I OO I OO I O	Well Disgpm et at (depth	infected [NA NA] Yes [X] No	
Illinois Department of			Particular			
Division of Environme 525 W. Jefferson Stree Springfield, IL 62761	ntal Healt					<u> </u>
-F Gr , 02 , 01			DO Not	write on the	se lines	

IMPORTANT NOTICE: This State Agency is requesting disclosure of information that is necessary	ary to a	accom	plis	h th
statutory purpose as outlined under Public Act 85-0863. DISCLOSURE OF THIS INFORMATION IS N	MAND	ATO	RY.	Thi
form has been approved by the Forms Management Center.				
10000				

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Da	ite <u>//</u>	10 1
GEOLOGICAL & WATER SURVEY WI	ELL RECOR	D ,
	7.7	7-114 PM 13/13/X
14. Driller D. Duscher	_License #	
13. Property Owner 14. Driller D. Duscher Name of Drilling Company Boart Grayear Cr Permit No. Date I:	mpani	16.
Permit No Date I	ssuéd	
17. Date Drilling Started 1120/00	1/2 Turn	-10 11 F1952
Township Name 11 1 Cand	100 <u> 1116-11</u> 1114	20
17. Date Drilling Started 11120100 18. Well SITE address 025 East US 1110Y S Township Name Land Subdivision Name Lot #		2
Location: a. County 1 6 4 4 4 5		
h Township IteM Range X F Section Di		
c. Sid Quarter SE Quarter Site Elevation 22. Casings, Liners*, & Screen Information		
d. coordinates: Site Elevation	ft.(msl)	
22. Casings, Liners*, & Screen Information	To (6.)	
Diam. (in.) Material Joint Slot Size From (ft.)	10 (IL)	
2 St. Steel Threaded 0.010" 9600	45.	For Survey U
		Only
		•
(*)		
(List reason for liner, type of upper and lower seals installed)		
23. Water from at a depth of 95.5 a. static water level 31.99 ft. below casing which is	Π. 10 <u>'7/</u> /	round
b. pumping level is ft. pumping gpm after p	_m. accive g	hours
b. pumping level is to pumpingspin and p	amping 10.	
24. Earth Materials Passed Through	From (ft.)	To (ft.)
Silty Clay	0	55.0
Silt'	55.0	56.2
Claver Sitt	56.2	65.0
Silt	65.0	66.4
Clavey SII+	66.4	68.3
Sand	68.3	71.8
311+	71.8	72.7
Claver Silt	72.7	95.5
Sand	95.5	98.3
Silt	98.3	99,5
CLOVEN SIH	99.5	101.0
(If DRY HOLE, fill out log & indicate how hole was sealed)		

License Number

25. Licensed Water Well Contractor Signature

'E OR PRESS FIRMLY WITH BLACK INK PEN COMPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

1. Type of Well: a. Driven Well: Casing diamin. Depthft.							
b. Bored Well: Buried Slab [] Yes [] No Hole Diameterin. toft.;in. toft.;in. toft.							
c Drilled Well: PVC casing Formation packer set at depth of ft.							
Hole Diameterin. toft.;in. toft.;in. toft.							
Type of Grout							
	,		-				
d. Drilled Well: Ste Hole Diameter	el Casing-	Mechanic ft.;	ally Driver in. to	n [X] Yes ft.;	[] No in. to	 ft.	
Type of Grout	# of Bags	Grout Weight	From (ft.) To (ft.)	Tremie Depth	(ft.)	
I HEM W/ MYT			3,5	92	90		
	,						
e. Well finished wit	hin: 🊫 l	Jnconsolidated	Materials	[] Bed	lrock		
f. Kind of Gravel San	d Pack	Grain Size/S	upplier#	From (f	t.) To (ft.)		
Gamitz	*15	#47 PM	Flint	975	. 98		
Quart2			FI, A	99	105		
2. Well Use: [] Domestic [] Irrigation [] Commercial [] Livestock Monitoring [] Other 3. Date Well Completed: 7 11 O Well Disinfected [] Yes [] No Driller's estimated well yield							
Driller's estimated	l well yiel	d i A	gpm				
Date Permanent Pu Pump Capacity	mp instan . 1 A	gom Se	et at (depth	1) () (∖ ft.		
6. Pitless Adapter Mo	del and M	anufacturer:	AIA				
7. Well Cap Type and 8. Pressure Tank: Wo	Manufac	turer	iΛ		337 5 335		
 Pressure Tank: Wo Pump System Disn 				tive Air: [] Yes [] No		
10. Name of Pump Cor			,				
		•		. ,		-	
11. Pump Installer:	NIA		Ł	icense #	. '		
12. Licensed Pum			L	icense#_			
Licensed Pum	p Contrac	tor Signature					
Illinois Department of	Public He	alth			····		
Division of Environme		h					
525 W. Jefferson Stree Springfield, IL 62761	t .			•			
DO Not write on these lines							

IMPORTANT NOTICE: This State Agency is requesting disclosure of information that is necessar	ry to accompl	lish the
statutory purpose as outlined under Public Act 85-0863. DISCLOSURE OF THIS INFORMATION IS N	MANDATORY	Y. This
form has been approved by the Forms Management Center.	•	

GEOLOGICAL & WATER SURVEY WELL RECORD							
13. Property Owner	Well# <u>^4 inll</u>						
14. Driller Dale Dur Schar	License #15.						
Name of Drilling Company For A Too Wall	16.						
Permit No. Date	Issued						
17. Date Drilling Started 7/10/01 18. Well SITE address 10.2 5 First High West	36 Juxob 71 6195						
18. Well SITE address 675 Fresh High Control Canada Land	1ID# 20.						
	# 21.						
Location: a. County DALLOLOS							
b. Township 11 A/ Range 2 Section 2							
c. Quarter S Quarter Site Elevation (2)14	- 6.8						
d. coordinates: Site Elevation 1977	7. 2 π.(msi)						
22. Casings, Liners*, & Screen Information Diam. (in.) Material Joint Slot Size From (ft.) To (ft.)						
2 1 3 3 3 3 4 3 1 1 1 1 1 1 1 1 1 1 1 1 1	For Survey Use						
	Only						
(*)							
(List reason for liner, type of upper and lower seals installed 23. Water from at a depth of at a depth of a static water level and a static water	2 A to 101, 2 A						
a static water level 3 2 92 ft below casing which is 20	A in above ground						
b. pumping level is ft. pumping gpm after	pumping for hours						
	• • • •						
24. Earth Materials Passed Through	From (ft.) To (ft.)						
Siltu claus	101541						
Samo	154 1 5b.7						
oragnic Silt	567 633						
01814.514	1/2 3 1/2						
Mayry Silt	1 <u>64.1 (7.2)</u>						
Sit!	1725 75						
Saw	175 77.7						
Silky Sand	77,7 786						
Marie Silt	78 10 98						
	198 1012						
	1017 1/38						
Alanda S. It	102 6 100						
(If DRY HOLE, fill out log & indicate how hole was sealed)							
(11 PK 1 HOLE, IIIII out log & moleate now note was seated)	•						

License Number

25. Licensed Water Well Contractor Signature

ZE OR PRESS FIRMLY WITH BLACK INK PEN COMPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT

1. Type of Well: a. D	riven We	ll: Casing dian	ni	n. Deptl	nft.		
b. Bored Well: But Hole Diameter	ried Slab in. te	[]Yes [] n ft.:	in. to	ft.:	in. to	ft.	
c. Drilled Well: PY	/C casing	Formation pa	cker set at	depth of	ft.		
Hole Diameter	in. te	oft.; _	in. to_	ft.;	in. to	ft.	
Type of Grout	# of Bags	Grout Weight	From (ft.) To (ft.)	Tremie Depth	(ft.)	
	:						
		:					
	<u></u>	o <u>(5)</u> ft.; _	in. to_	ft.;	in. to		
Type of Grout	# of Bags	Grout Weight	From (ft) To (ft.)	Tremie Depth (ft.)	
NA.							
			, ,	1.			
e. Well finished wit	hin: 🔀 l	Jnconsolidated	Materials	[] Bec	lrock		
f. Kind of Gravel Sar	ıd Pack	Grain Size/S	upplier#	From (f	t.) To (ft.)		
Ocontz #15 Pol Flor 3.5 4.0							
Quatz		20-120 811	AFlica	4.0	15.0		
2. Well Use: [] Domestic [] Irrigation [] Commercial [] Livestock [] Monitoring [] Other 3. Date Well Completed: 7 10 0 Well Disinfected [] Yes [] No Driller's estimated well yield							
Illinois Department of Division of Environme 525 W. Jefferson Stree Springfield, IL 62761	ntal Healt		DO Not	write on the	ese lines		

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	GEO!	LOGICAL &	WATER S	SURVEY V	VELL RECO	SD (1 3 2
13. Property (Owner					Well# <u>M V</u>	JIC
1/ Driller	500 TO	(15) Cha	Lan-		License #		
Name of Drill Permit No.	ing Compan	y <u>P</u> /n	<u>√4: 1 1</u>	Watter		<u>, 2017-7-</u>	16
Name of Drill Permit No				. ∋ Date	lssued		
17. Date Drill	ing Started _	71101	OI P		c 76 T	and Th	619
18. Well SITI	L address <u>!</u>	<u> </u>	15.7	L to I ar	<i>11.7 30 , 18</i>	م کر از ال از	20
Subdivision N	me <u>/: / 1</u> Joma	CYPT	· · · · · · · · · · · · · · · · · · ·	Lai.	:#		
Leastion: n. C	County	VIII C. 105				L	 -
b. Townsh	ip 1/AAT	Range	7F S	ection	210	 	
b. Townsh c. Syl d. coordina 22. Casings, I	Quarter _	<u> Na</u> Quarter	NEC	Quarter	- 20		
d. coordin	ates:		Site Elev	ration <u>(^</u>	$\underline{I2}$ ft.(msl)		
22. Casings, I	_iners*, & So	reen Inform	ation	P /6			
Diam. (in.)	Material	јопп	2101 2126	rioniti	10 (11.)		+
	9	The Maried	O.OHi	4.9	14.5	For S	urvey
			- 10-7			(Only
(*)			44400				
(List	reason for line	r, type of uppe	er and lower	seals installe	:d)	rnv _	
23. Water from	m <u>- 1 † 14 </u>	Sunt	at a dep	th of <u>②</u>	<u>o</u> ft. to	<u> </u>	EG *
a. static w	ater level 10	ft. belo	w casing w	hich is	4in above s	ground (* * * * *	10
b. pumpin	ig ievei is	п. рип	iping	_gpm anei	pumping for	nours	,
24. Earth Ma	terials Passe	d Through			From (ft.)	To (ft.)	
C :	010.4	2 1111 7 11 11			1 /	10.12	
3111 6	Clay	· ř:	· · · · · · · · · · · · · · · · · · ·		<u> </u>	0.0	ĺ
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			A	550027		<u> </u>	
			1 2	\$1200 min 200 quanto			
1					1000 CHILD		
(If DRV II)	LE, fill out	log & indicat	e how hole	was sealed	<u> </u>	1	
ענו באכנון ו	ا HILL (بديدر	IND OF HIGHOR	P SION IN BIOTO	an newlet	· <i>,</i>		

25. Licensed Water Well Contractor Signature



APPENDIX D

AQUIFER HYDRAULIC CONDUCTIVITY TESTING GRAPHS AND DATA

D-1 Graphs

D-2 Testing Data

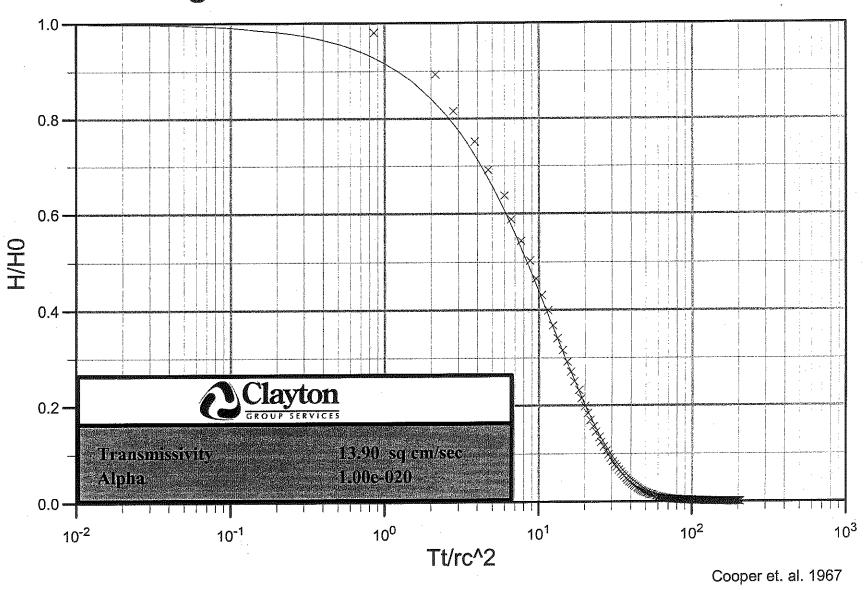


APPENDIX D-1

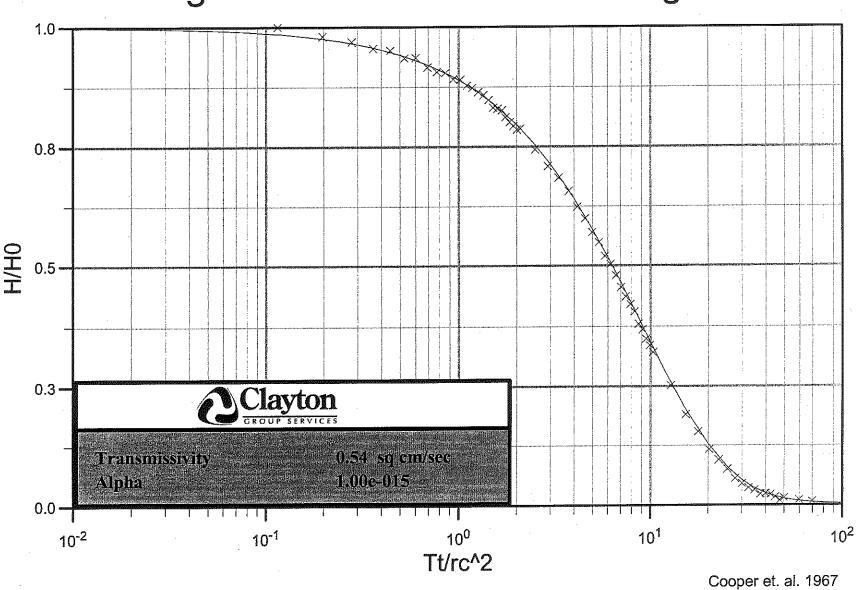
GRAPHS

Final Environmental Indicators Report Millennium Petrochemicals / Tuscola, Illinois coverpgs_imf.doc \ 10/31/01 \ MMN\BRS

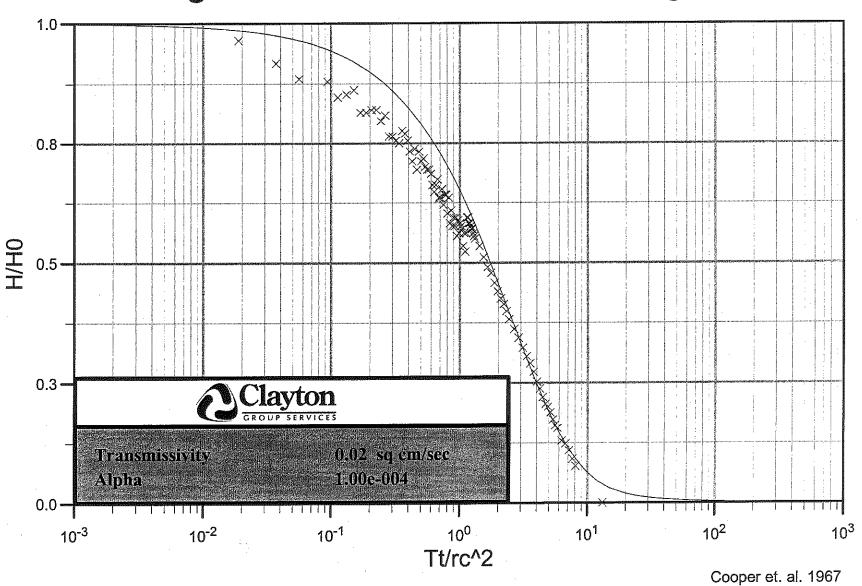
Slugtest Results: MW01D Rising Head



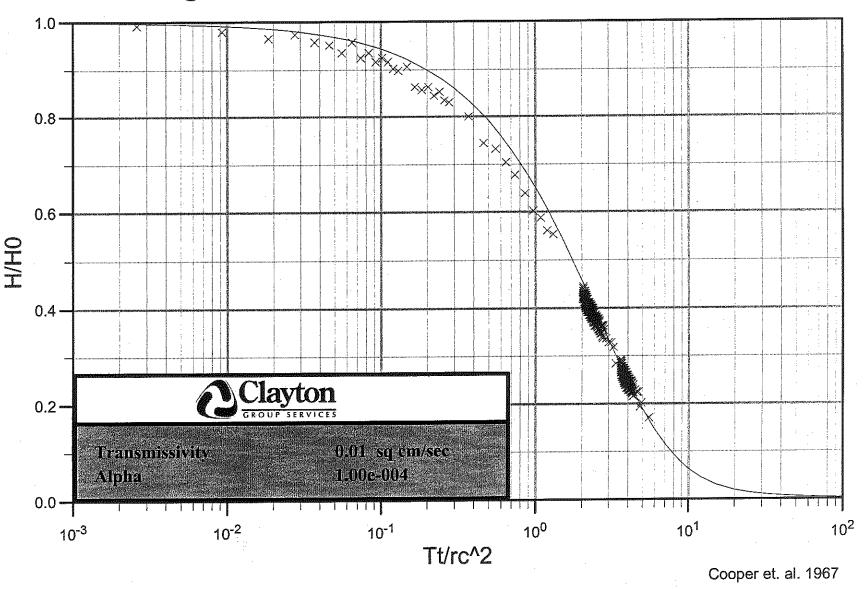
Slugtest Results: MW01S Rising Head



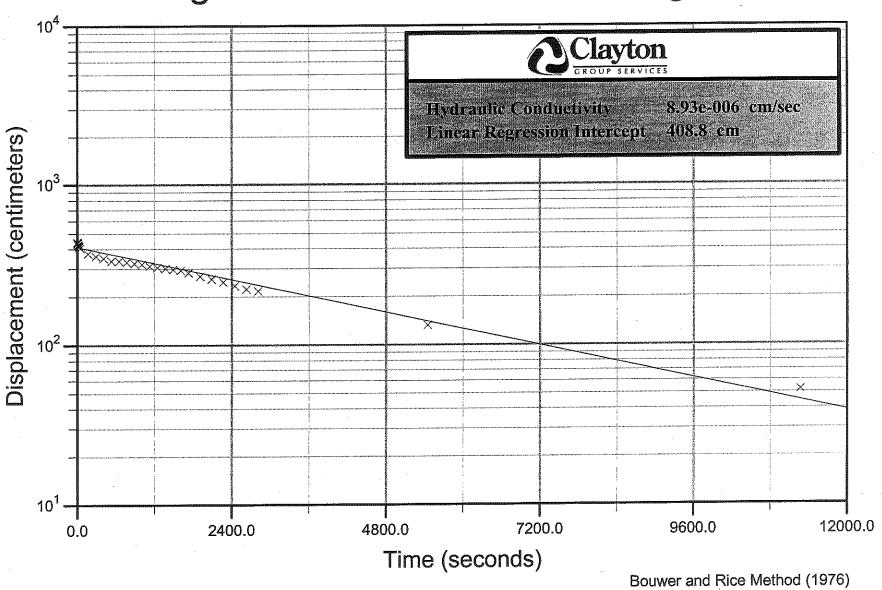
Slugtest Results: MW02D Rising Head



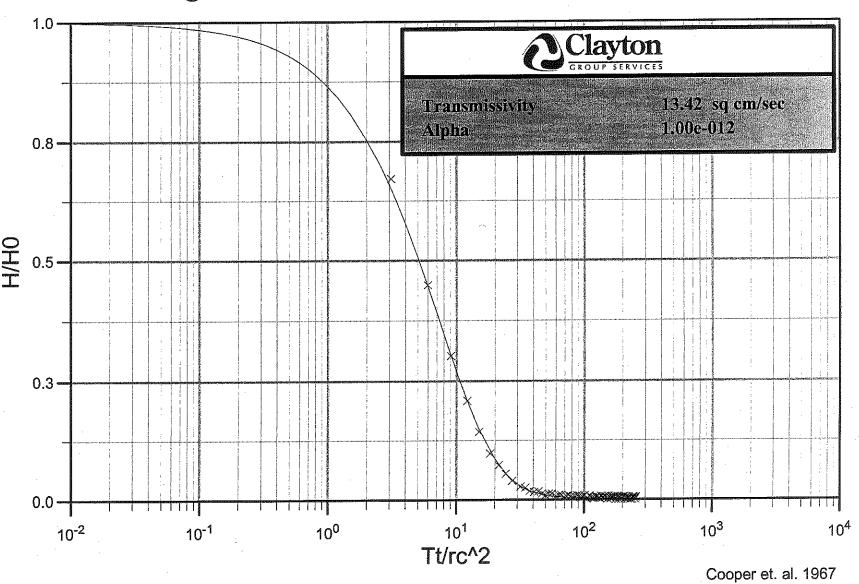
Slugtest Results: MW02D Falling Head



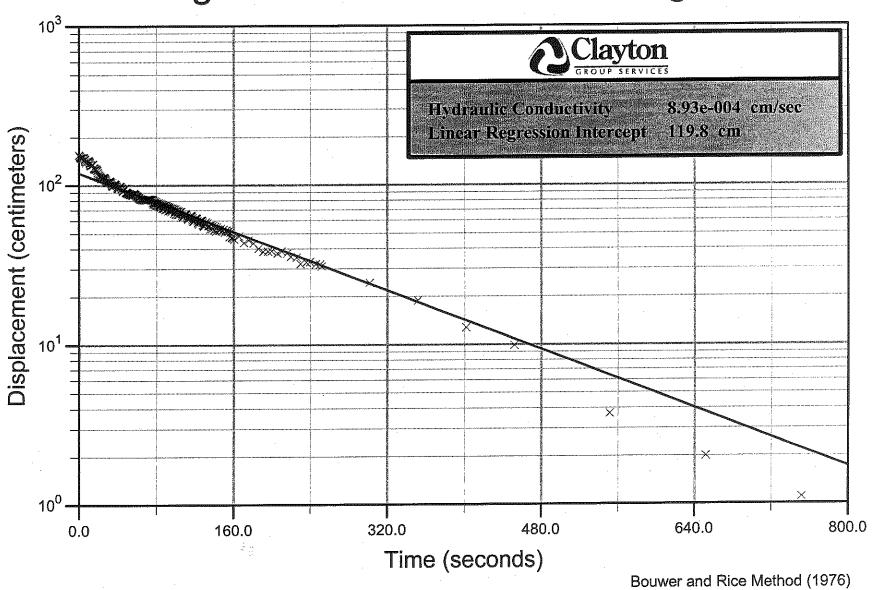
Slugtest Results: MW02S Rising Head



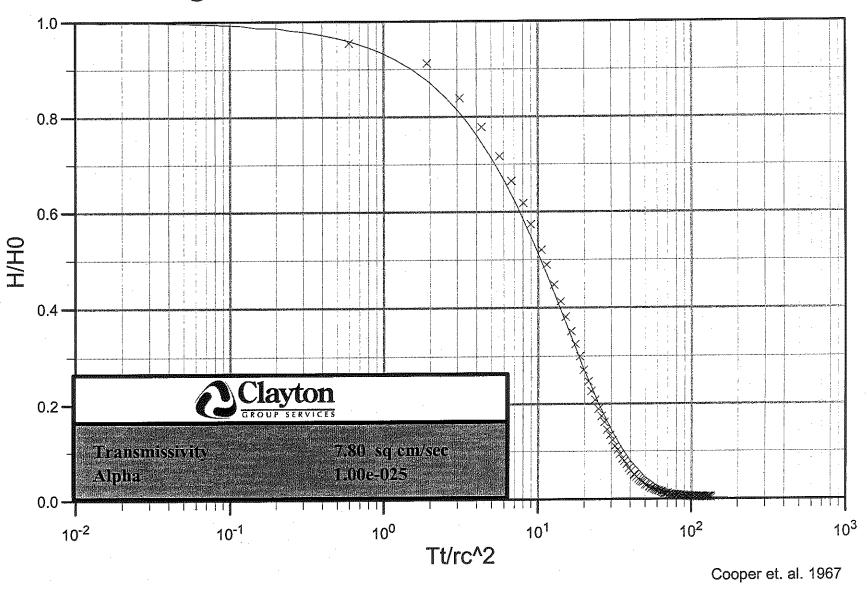
Slugtest Results: MW03D Rising Head



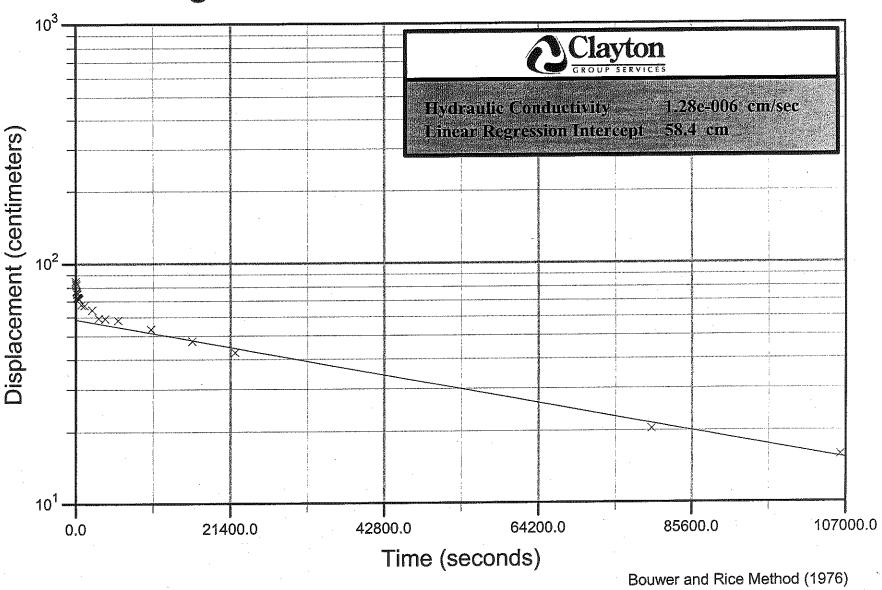
Slugtest Results: MW03S Rising Head



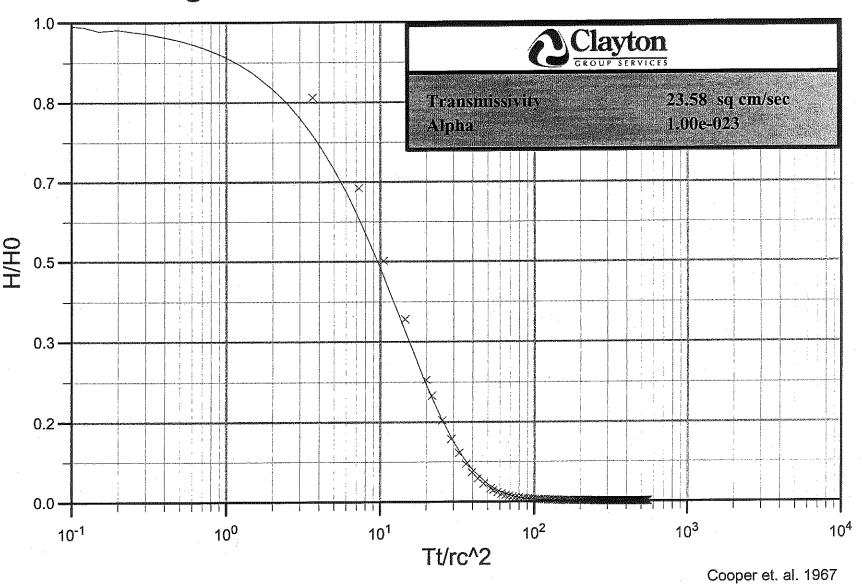
Slugtest Results: MW04D Rising Head



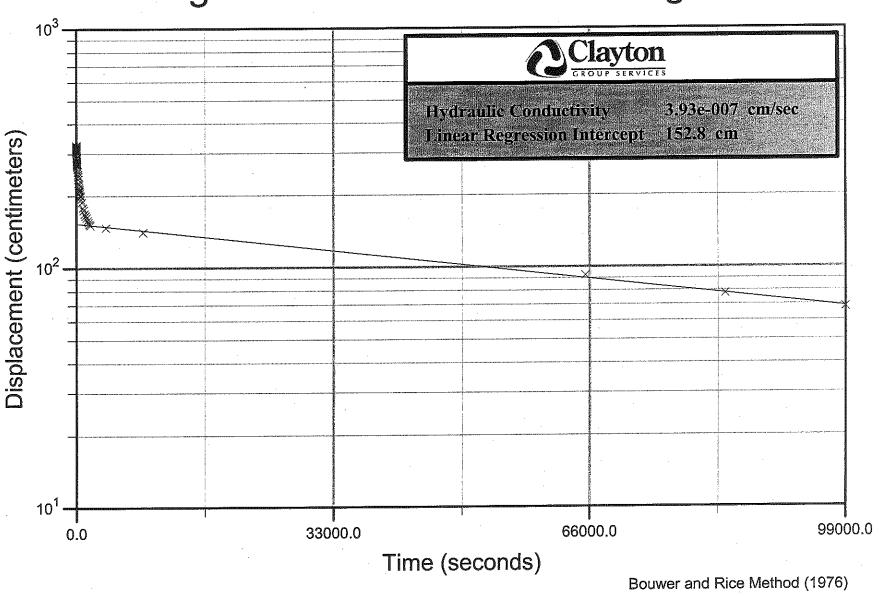
Slugtest Results: MW04S Rising Head



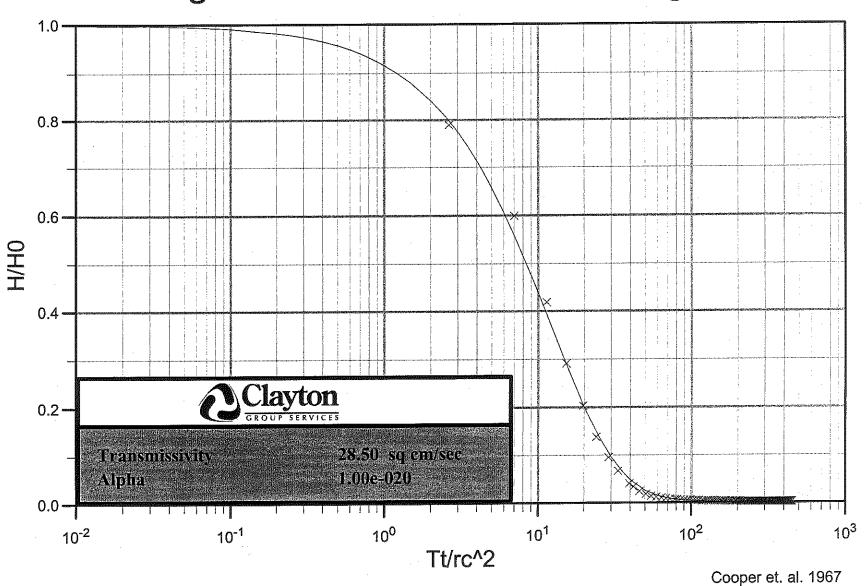
Slugtest Results: MW05D Rising Head



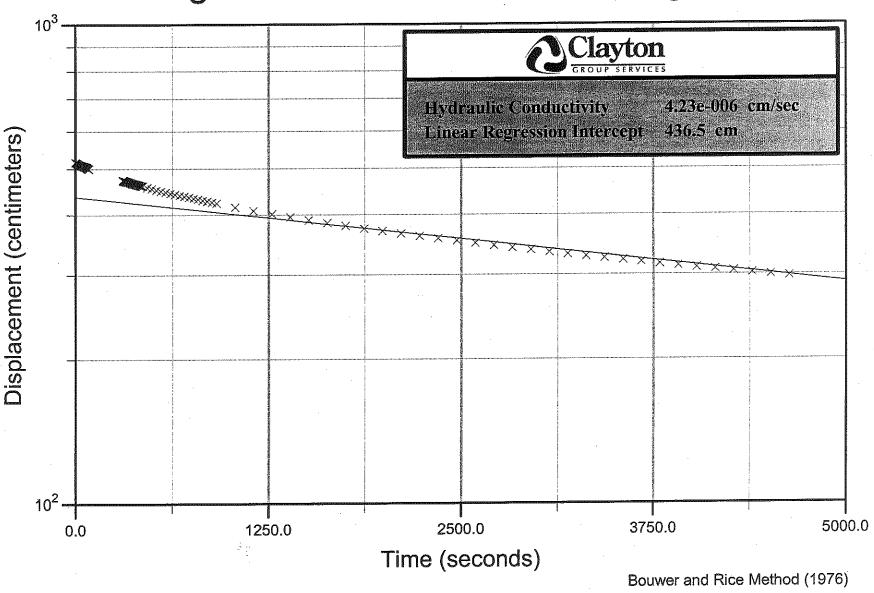
Slugtest Results: MW05S Rising Head



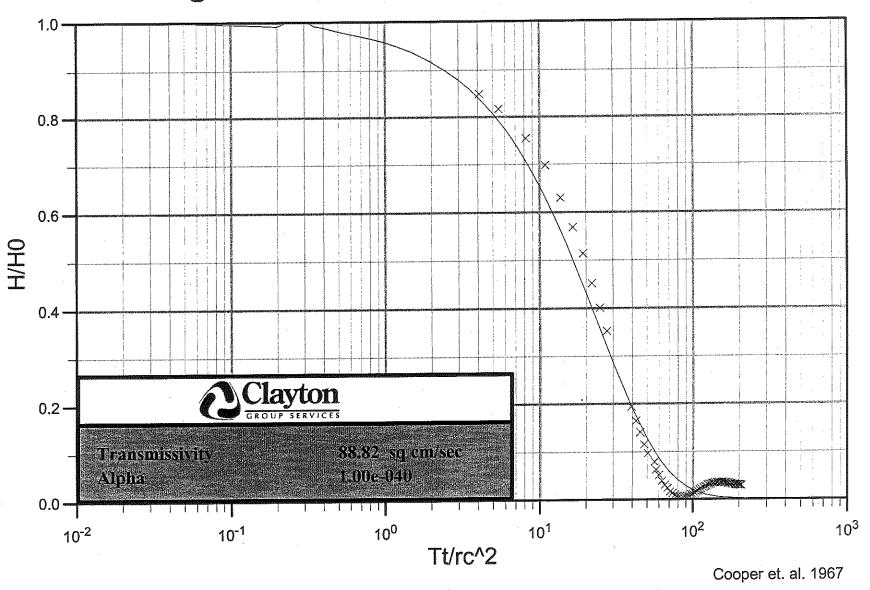
Slugtest Results: MW06D Rising Head



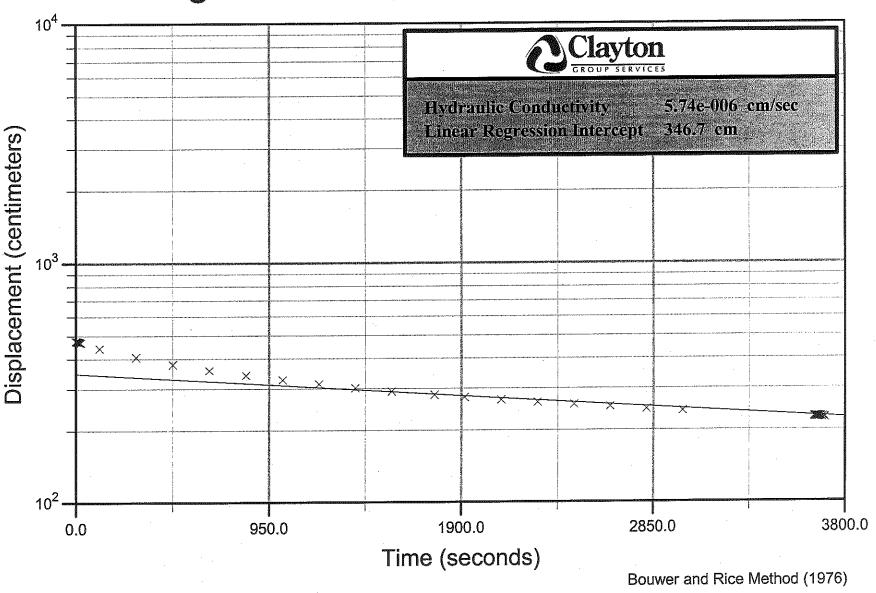
Slugtest Results: MW06S Rising Head



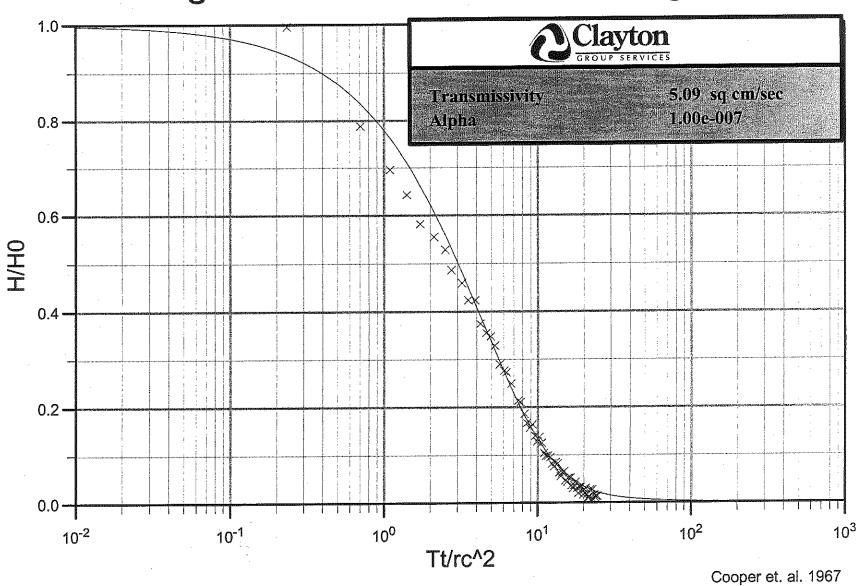
Slugtest Results: MW07D Rising Head



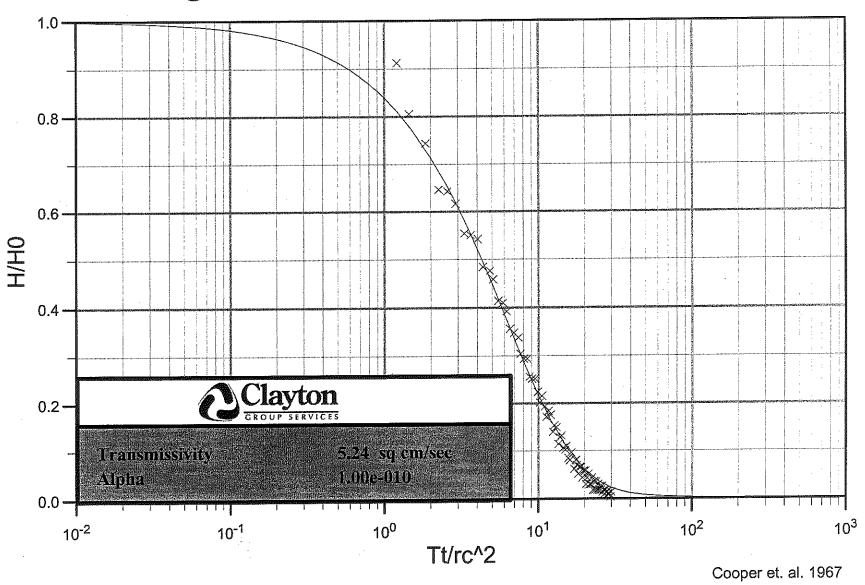
Slugtest Results: MW07S Rising Head



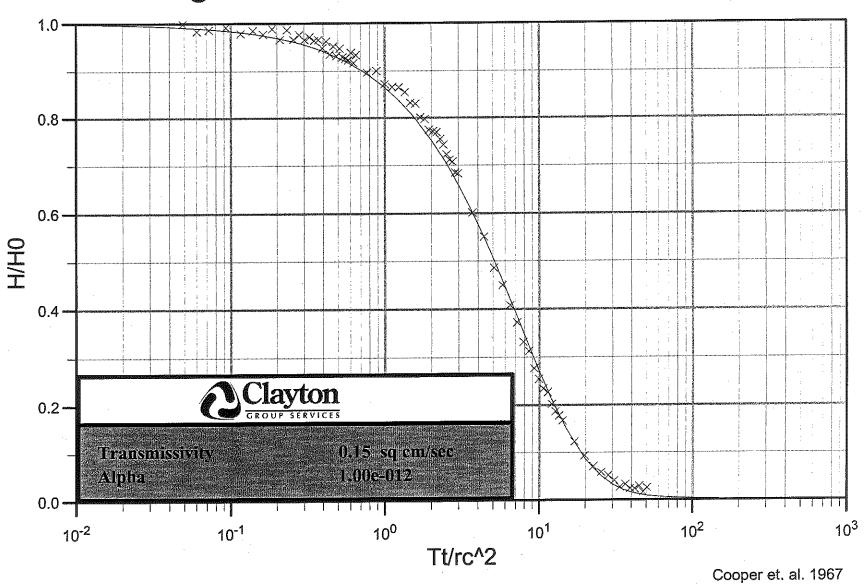
Slugtest Results: MW08D Rising Head



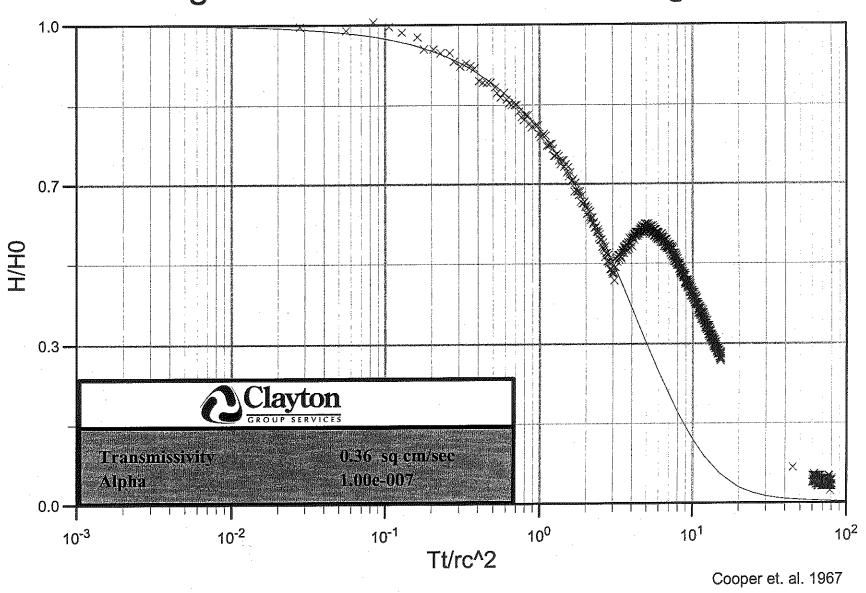
Slugtest Results: MW08D Falling Head



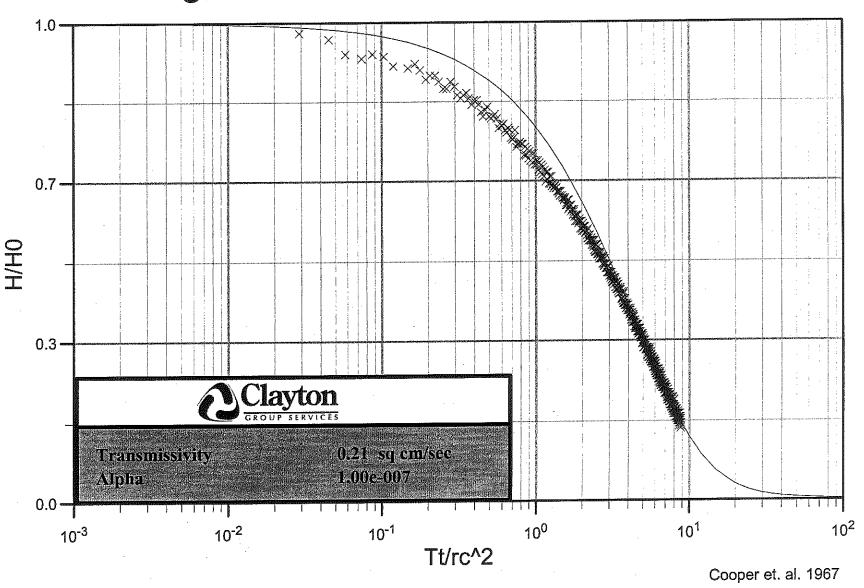
Slugtest Results: MW08S Rising Head



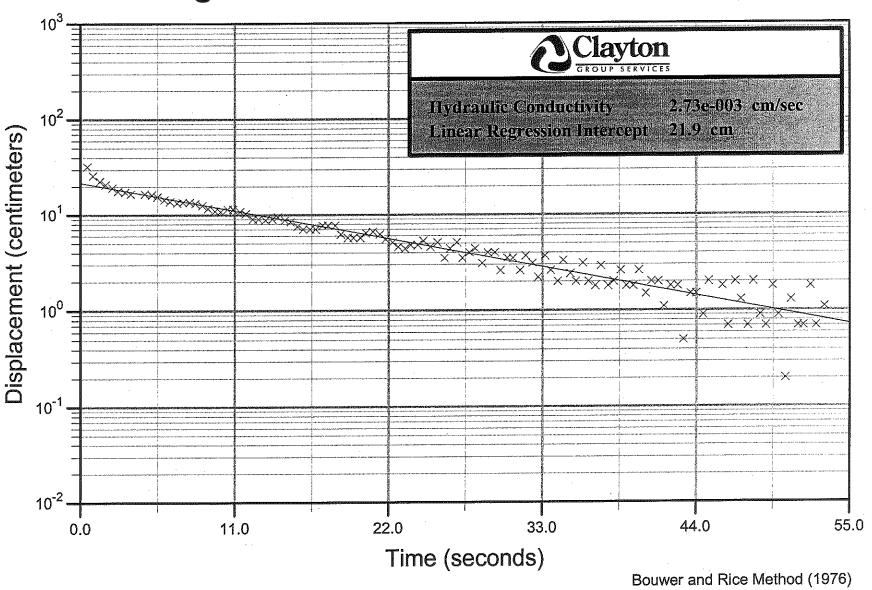
Slugtest Results: MW09D Rising Head



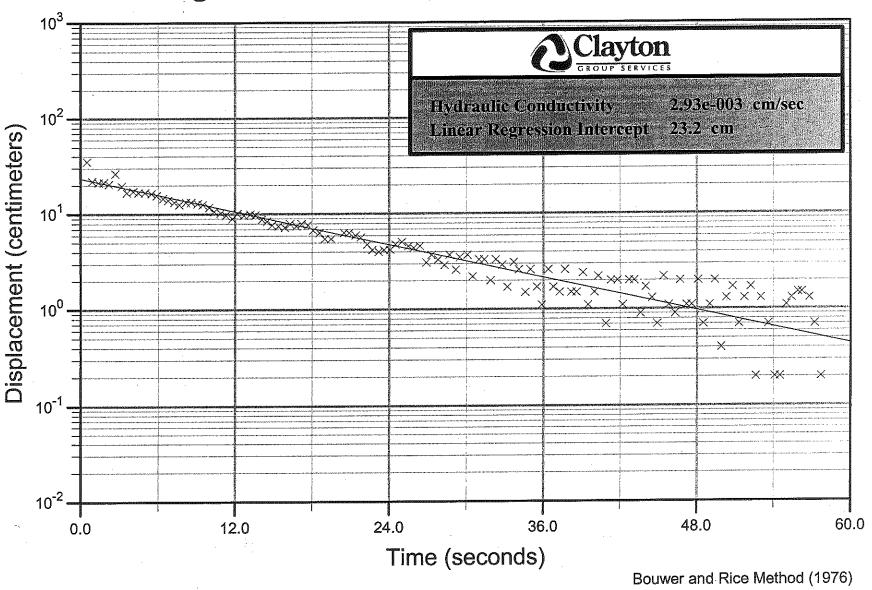
Slugtest Results: MW09D Falling Head



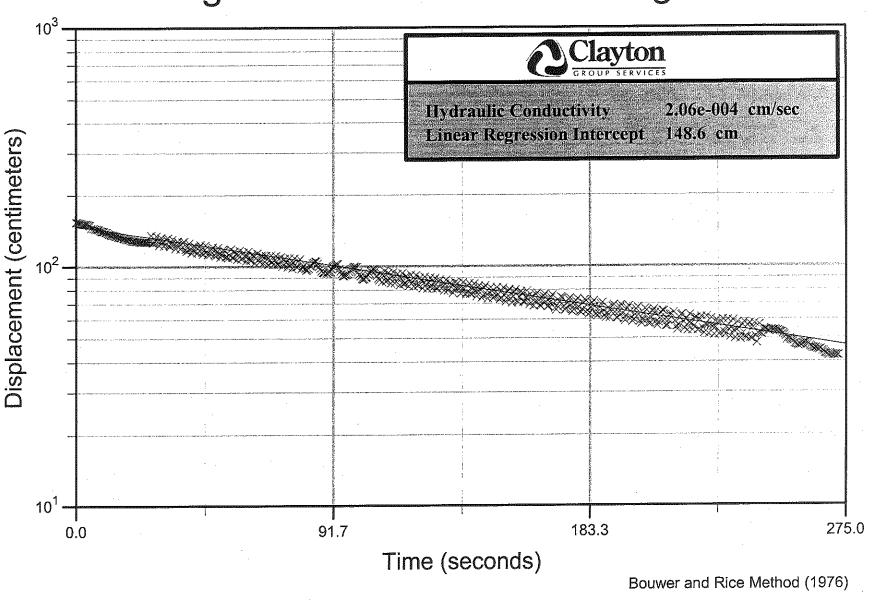
Slugtest Results: MW09S Rising Head



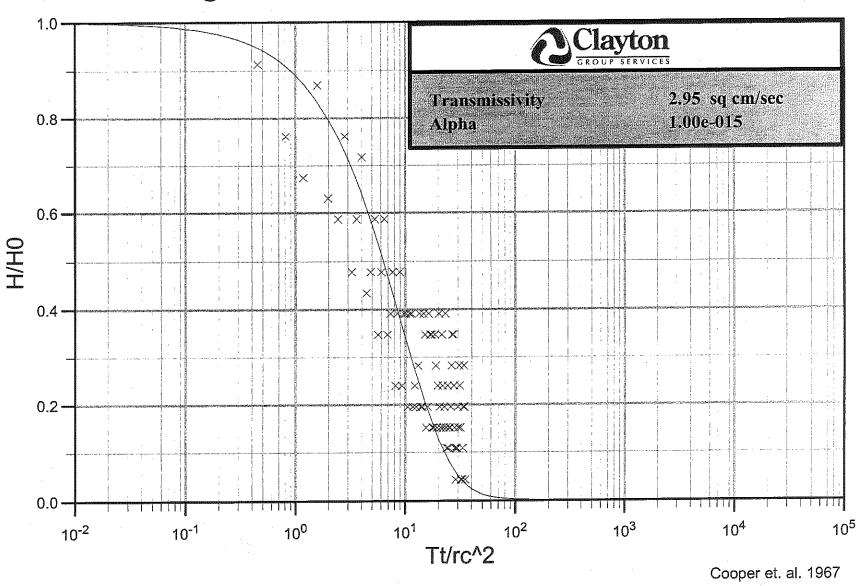
Slugtest Results: MW09S Falling Head



Slugtest Results: MW10 Rising Head



Slugtest Results: MW11 Rising Head



Slugtest Results: MW11 Falling Head

